S.N. 10/629962


```
=> d que
L6             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  497-19-8
L7             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  15667-84-2
L9             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  ZIRCONIUM BASIC CARBONATE
                 AND L7
L10            2 SEA FILE=REGISTRY ABB=ON  PLU=ON  "ZIRCONIUM CARBONATE"/CN
L12            7 SEA FILE=REGISTRY ABB=ON  PLU=ON  ("SODIUM ZIRCONIUM CARBONATE
                 HYDROXIDE (NA3ZR4(CO3)3(OH)13)"/CN OR "SODIUM ZIRCONIUM
                 CARBONATE HYDROXIDE OXIDE"/CN OR "SODIUM ZIRCONIUM CARBONATE
                 HYDROXIDE OXIDE (NA3ZR2(CO3)3(OH)3O)"/CN OR "SODIUM ZIRCONIUM
                 CARBONATE HYDROXIDE OXIDE (NA3ZR2(CO3)3(OH)3O), HYDRATE
                 (2:9)"/CN OR "SODIUM ZIRCONIUM CARBONATE HYDROXIDE OXIDE,
                 HYDRATE"/CN OR "SODIUM ZIRCONIUM CARBONATE OXIDE (NA2ZR4(CO3)2O
                 7)"/CN OR "SODIUM ZIRCONIUM CARBONATE OXIDE (NA2ZR4(CO3)2O7),
                 PENTADECAHYDRATE"/CN)
L13            3 SEA FILE=REGISTRY ABB=ON  PLU=ON  "ZIRCONIUM PHOSPHATE"/CN
L14         1776 SEA FILE=CAPLUS ABB=ON  PLU=ON  L13
L15            4 SEA FILE=CAPLUS ABB=ON  PLU=ON  L12
L16          181 SEA FILE=CAPLUS ABB=ON  PLU=ON  L10
L17           79 SEA FILE=CAPLUS ABB=ON  PLU=ON  L9
L18            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  1310-73-2
L19       102609 SEA FILE=CAPLUS ABB=ON  PLU=ON  L6 OR L18
L20           17 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L15 OR L16 OR L17) AND L19
L21           89 SEA FILE=CAPLUS ABB=ON  PLU=ON  L14 AND PROCESS?(5A)(MAKING OR
                 MAKE? OR PREP? OR MANUFACTUR? OR SYNTHESIS OR PRODUC?)
L22          105 SEA FILE=CAPLUS ABB=ON  PLU=ON  L20 OR L21
L23            5 SEA FILE=CAPLUS ABB=ON  PLU=ON  L21 AND L19
L24            4 SEA FILE=CAPLUS ABB=ON  PLU=ON  L21 AND (L15 OR L16 OR L17)
L25           24 SEA FILE=CAPLUS ABB=ON  PLU=ON  L20 OR L23 OR L24
L26            7 SEA FILE=CAPLUS ABB=ON  PLU=ON  (HEAT? OR TEMP? OR RADIAT? OR
                 BOIL? OR FURNAC?) AND L25
L27           12 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND
                 (FILTRA? OR FILTER?)
L28           18 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND
                 (FILTRA? OR FILTER? OR WASH?)
L29            9 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND
                 POWDER?
L30            4 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND
                 MOISTURE?
L31            6 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND PURIF?

L38           11 SEA FILE=CAPLUS ABB=ON  PLU=ON  ZRCO3
L43       368538 SEA FILE=CAPLUS ABB=ON  PLU=ON  PROCESS(5A)(MAKE OR MAKING OR
                 PRODUC? OR MANUFACT? OR PREP?)
L44            2 SEA FILE=CAPLUS ABB=ON  PLU=ON  L38 AND L43
L45           37 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L26 OR L27 OR L28 OR L29 OR
                 L30 OR L31) OR L44
L46           61 SEA FILE=WPIX ABB=ON  PLU=ON  (ZIRCONIUM PHOSPHATE OR ZRHPO4)(5
                 A)(PROCESS? OR PREP? OR MANUFACTUR? OR SYNTHESIS OR MAKE OR
                 MAKING OR PRODUC?)
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L47           1 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND (CAUSTIC SODA OR ASH)
                AND (ZIRCONIUM CARBONATE OR SODIUM ZIRCONIUM CARBONATE)
L48           9 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND HEAT
L49          15 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND HEAT?
L50           9 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND (WASH? OR FILTER? OR
                FILTRAT?)
L51          20 SEA FILE=WPIX ABB=ON  PLU=ON  (L47 OR L48 OR L49 OR L50)
L52           2 SEA FILE=WPIX ABB=ON  PLU=ON  L51 AND (CAUSTIC SODA OR ASH OR
                SODIUM(3A)CARBONATE)
L53           2 SEA FILE=WPIX ABB=ON  PLU=ON  L51 AND ZIRCONIUM(3A)CARBONATE
L54           2 SEA FILE=WPIX ABB=ON  PLU=ON  L52 AND L53
L55           5 SEA FILE=WPIX ABB=ON  PLU=ON  ZRCO3 OR ZRHPO4
L62           7 SEA FILE=WPIX ABB=ON  PLU=ON  (L52 OR L53 OR L54 OR L55) OR
                LL57
L67           7 SEA FILE=CAPLUS ABB=ON  PLU=ON  L45 AND (CAUSTIC SODA OR SODA
                OR ASH OR SODIUM(4A)CARBONATE)
L68          33 SEA FILE=CAPLUS ABB=ON  PLU=ON  L45 AND ZIRCONIUM?
L69          33 SEA FILE=CAPLUS ABB=ON  PLU=ON  L67 OR L68
L70           2 SEA FILE=WPIX ABB=ON  PLU=ON  L62 AND ZIRCONIUM? AND (SODA OR
                ASH OR NA2CO3)
L72         232 SEA FILE=CAPLUS ABB=ON  PLU=ON  L14(L)(PREP OR IMF OR SPN)/RL
L73           9 SEA FILE=CAPLUS ABB=ON  PLU=ON  L72 AND (L6 OR L7 OR L18)
L75          40 SEA FILE=CAPLUS ABB=ON  PLU=ON  L73 OR L69
L78          40 SEA FILE=CAPLUS ABB=ON  PLU=ON  L75 AND ZIRCONIUM?
L82          41 DUP REM L78 L70 (1 DUPLICATE REMOVED)

=> d cost
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                 ENTRY    SESSION

CONNECT CHARGES                                   1.86     178.61
NETWORK CHARGES                                   0.06      14.22
SEARCH CHARGES                                    0.00     217.93
DISPLAY CHARGES                                   0.00     179.41
                                              -------     -------
                                                  1.92     590.17
CAPLUS FEE (5%)                                   0.00      18.21
                                              -------     -------
FULL ESTIMATED COST                               1.92     608.38

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)    SINCE FILE      TOTAL
                                                 ENTRY    SESSION
CA SUBSCRIBER PRICE                               0.00     -29.10

IN FILE 'WPIX' AT 14:27:04 ON 30 MAR 2004
```

=> file reg
FILE 'REGISTRY' ENTERED AT 14:25:48 ON 30 MAR 2004

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 29 MAR 2004 HIGHEST RN 668968-88-5
DICTIONARY FILE UPDATES: 29 MAR 2004 HIGHEST RN 668968-88-5

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> file caplus
FILE 'CAPLUS' ENTERED AT 14:25:51 ON 30 MAR 2004

FILE COVERS 1907 - 30 Mar 2004 VOL 140 ISS 14
FILE LAST UPDATED: 29 Mar 2004 (20040329/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> file wpix
FILE 'WPIX' ENTERED AT 14:26:02 ON 30 MAR 2004

FILE LAST UPDATED: 26 MAR 2004 <20040326/UP>
MOST RECENT DERWENT UPDATE: 200421 <200421/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://thomsonderwent.com/coverage/latestupdates/ <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER
GUIDES, PLEASE VISIT:
http://thomsonderwent.com/support/userguides/ <<<

>>> ADDITIONAL POLYMER INDEXING CODES WILL BE IMPLEMENTED FROM
DERWENT UPDATE 200403.
THE TIME RANGE CODE WILL ALSO CHANGE FROM 018 TO 2004.
SDIS USING THE TIME RANGE CODE WILL NEED TO BE UPDATED.
FOR FURTHER DETAILS: http://thomsonderwent.com/chem/polymers/ <<<

>>> NEW! FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT
DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
FIRST VIEW - FILE WPIFV. FREE CONNECT HOUR UNTIL 1 MAY 2004.
FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv <<<

>>> IMAGES FOR UPDATE 200421 HAVE NOT YET BEEN LOADED <<<

=> d que
L6 1 SEA FILE=REGISTRY ABB=ON PLU=ON 497-19-8
L7 1 SEA FILE=REGISTRY ABB=ON PLU=ON 15667-84-2
L9 1 SEA FILE=REGISTRY ABB=ON PLU=ON ZIRCONIUM BASIC CARBONATE
AND L7
L10 2 SEA FILE=REGISTRY ABB=ON PLU=ON "ZIRCONIUM CARBONATE"/CN
L12 7 SEA FILE=REGISTRY ABB=ON PLU=ON ("SODIUM ZIRCONIUM CARBONATE
HYDROXIDE (NA3ZR4(CO3)3(OH)13)"/CN OR "SODIUM ZIRCONIUM
CARBONATE HYDROXIDE OXIDE"/CN OR "SODIUM ZIRCONIUM CARBONATE
HYDROXIDE OXIDE (NA3ZR2(CO3)3(OH)3O)"/CN OR "SODIUM ZIRCONIUM
CARBONATE HYDROXIDE OXIDE (NA3ZR2(CO3)3(OH)3O), HYDRATE
(2:9)"/CN OR "SODIUM ZIRCONIUM CARBONATE HYDROXIDE OXIDE,
HYDRATE"/CN OR "SODIUM ZIRCONIUM CARBONATE OXIDE (NA2ZR4(CO3)2O
7)"/CN OR "SODIUM ZIRCONIUM CARBONATE OXIDE (NA2ZR4(CO3)2O7),
PENTADECAHYDRATE"/CN)
L13 3 SEA FILE=REGISTRY ABB=ON PLU=ON "ZIRCONIUM PHOSPHATE"/CN
L14 1776 SEA FILE=CAPLUS ABB=ON PLU=ON L13
L15 4 SEA FILE=CAPLUS ABB=ON PLU=ON L12
L16 181 SEA FILE=CAPLUS ABB=ON PLU=ON L10
L17 79 SEA FILE=CAPLUS ABB=ON PLU=ON L9
L18 1 SEA FILE=REGISTRY ABB=ON PLU=ON 1310-73-2
L19 102609 SEA FILE=CAPLUS ABB=ON PLU=ON L6 OR L18

KOROMA EIC1700

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L20          17 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L15 OR L16 OR L17) AND L19
L21          89 SEA FILE=CAPLUS ABB=ON  PLU=ON  L14 AND PROCESS?(5A)(MAKING OR
                MAKE? OR PREP? OR MANUFACTUR? OR SYNTHESIS OR PRODUC?)
L22         105 SEA FILE=CAPLUS ABB=ON  PLU=ON  L20 OR L21
L23           5 SEA FILE=CAPLUS ABB=ON  PLU=ON  L21 AND L19
L24           4 SEA FILE=CAPLUS ABB=ON  PLU=ON  L21 AND (L15 OR L16 OR L17)
L25          24 SEA FILE=CAPLUS ABB=ON  PLU=ON  L20 OR L23 OR L24
L26           7 SEA FILE=CAPLUS ABB=ON  PLU=ON  (HEAT? OR TEMP? OR RADIAT? OR
                BOIL? OR FURNAC?) AND L25
L27          12 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND
                (FILTRA? OR FILTER?)
L28          18 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND
                (FILTRA? OR FILTER? OR WASH?)
L29           9 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND
                POWDER?
L30           4 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND
                MOISTURE?
L31           6 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L21 OR L22 OR L25) AND PURIF?

L38          11 SEA FILE=CAPLUS ABB=ON  PLU=ON  ZRCO3
L43      368538 SEA FILE=CAPLUS ABB=ON  PLU=ON  PROCESS(5A)(MAKE OR MAKING OR
                PRODUC? OR MANUFACT? OR PREP?)
L44           2 SEA FILE=CAPLUS ABB=ON  PLU=ON  L38 AND L43
L45          37 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L26 OR L27 OR L28 OR L29 OR
                L30 OR L31) OR L44
L46          61 SEA FILE=WPIX ABB=ON  PLU=ON  (ZIRCONIUM PHOSPHATE OR ZRHPO4)(5
                A)(PROCESS? OR PREP? OR MANUFACTUR? OR SYNTHESIS OR MAKE OR
                MAKING OR PRODUC?)
L47           1 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND (CAUSTIC SODA OR ASH)
                AND (ZIRCONIUM CARBONATE OR SODIUM ZIRCONIUM CARBONATE)
L48           9 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND HEAT
L49          15 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND HEAT?
L50           9 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND (WASH? OR FILTER? OR
                FILTRAT?)
L51          20 SEA FILE=WPIX ABB=ON  PLU=ON  (L47 OR L48 OR L49 OR L50)
L52           2 SEA FILE=WPIX ABB=ON  PLU=ON  L51 AND (CAUSTIC SODA OR ASH OR
                SODIUM(3A)CARBONATE)
L53           2 SEA FILE=WPIX ABB=ON  PLU=ON  L51 AND ZIRCONIUM(3A)CARBONATE
L54           2 SEA FILE=WPIX ABB=ON  PLU=ON  L52 AND L53
L55           5 SEA FILE=WPIX ABB=ON  PLU=ON  ZRCO3 OR ZRHPO4
L62           7 SEA FILE=WPIX ABB=ON  PLU=ON  (L52 OR L53 OR L54 OR L55) OR
                LL57
L67           7 SEA FILE=CAPLUS ABB=ON  PLU=ON  L45 AND (CAUSTIC SODA OR SODA
                OR ASH OR SODIUM(4A)CARBONATE)
L68          33 SEA FILE=CAPLUS ABB=ON  PLU=ON  L45 AND ZIRCONIUM?
L69          33 SEA FILE=CAPLUS ABB=ON  PLU=ON  L67 OR L68
L70           2 SEA FILE=WPIX ABB=ON  PLU=ON  L62 AND ZIRCONIUM? AND (SODA OR
                ASH OR NA2CO3)
L72         232 SEA FILE=CAPLUS ABB=ON  PLU=ON  L14(L)(PREP OR IMF OR SPN)/RL
L73           9 SEA FILE=CAPLUS ABB=ON  PLU=ON  L72 AND (L6 OR L7 OR L18)
L75          40 SEA FILE=CAPLUS ABB=ON  PLU=ON  L73 OR L69
L78          40 SEA FILE=CAPLUS ABB=ON  PLU=ON  L75 AND ZIRCONIUM?
```

L82 41 DUP REM L78 L70 (1 DUPLICATE REMOVED)

=> d ti 1-41
YOU HAVE REQUESTED DATA FROM FILE 'WPIX, CAPLUS' - CONTINUE? (Y)/N:y

L82 ANSWER 1 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Production of **zirconium** phosphate and its use

L82 ANSWER 2 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Synthesis of **zirconium** phosphate and hafnium phosphate and their uses

L82 ANSWER 3 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Syntheses of hydrous **zirconium** oxide, hydrous hafnium oxide and their uses

L82 ANSWER 4 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Hybrid membrane, method for producing the same, and use of said membrane

L82 ANSWER 5 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Thermoplastic material with high barrier properties

L82 ANSWER 6 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Proton-conductive gel, proton conductor, and **processes** for **producing** these

L82 ANSWER 7 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Process** for **preparing** reactive compositions for fluid treatment

L82 ANSWER 8 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Sustained-release porous fine particles and their manufacture

L82 ANSWER 9 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Nickel-containing sorbent and process for **purification** of a gas or liquefied gas

L82 ANSWER 10 OF 41 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
TI Low sidestream smoke cigarette has solid solution of particulate mixed metal oxides, e.g. high surface area cerium/**zirconium** mixed oxide, used as catalyst and adjunct.

L82 ANSWER 11 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
TI Methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate

L82 ANSWER 12 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Lamellar compounds based on phosphates of **zirconium** and(or) titanium and their manufacture for reinforcing thermoplastics

L82 ANSWER 13 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Catalyst for decomposition of engine exhaust gases with high efficiency of particulate capture and high regeneration and its manufacture

L82 ANSWER 14 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Stand with high resistance to reaction for supporting ceramic products during sintering

L82 ANSWER 15 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Nanometer phosphate antibacterial composite and its **preparation process**

L82 ANSWER 16 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Nano bactericidal **powder** and its **preparation process**

L82 ANSWER 17 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Manufacture of basic **zirconium** carbonate by solid phase process

L82 ANSWER 18 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Purification** of water-salt solutions by Ti(IV) and Zr(IV) phosphates

L82 ANSWER 19 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Studies on the processing techniques of compound antibacterial **powder** materials and production application

L82 ANSWER 20 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Preparation and use of composite adsorbent to remove 137Cs from liquid radioactive wastes

L82 ANSWER 21 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Method for producing chemically bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents

L82 ANSWER 22 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Deodorization agent composition and deodorant product

L82 ANSWER 23 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Rare earth metal-based permanent magnet and **process** for **producing** it with a corrosion-inhibitor layer

L82 ANSWER 24 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Silver-coated inorganic microbicides and their manufacture

L82 ANSWER 25 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Preparation of hydroxyl-containing compounds and silver-loaded hydroxylation catalysts therefor

L82 ANSWER 26 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Gelation additive for hydraulic fracturing fluids

L82 ANSWER 27 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Carboxyalkyl substituted polygalactomannan fracturing fluids crosslinked with **zirconium** salt

L82 ANSWER 28 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI A TGA investigation of hydrated monoclinic zirconia

L82 ANSWER 29 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Preparation and structure of complex orthophosphates of **zirconium** and alkali metals. I. Cesium **zirconium** and sodium **zirconium** phosphates

L82 ANSWER 30 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Manufacture of aluminum cans having excellent sliding property

L82 ANSWER 31 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Grain-oriented electrical steel sheet having high magnetic flux density and ultra low core loss and process for producing the sheet

L82 ANSWER 32 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Process** for **producing** dipentaerythritol

L82 ANSWER 33 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Manufacture and use of layered, crystalline hydrogen-phosphate compounds

L82 ANSWER 34 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Stability of **zirconium** cobalt hydrides (ZrCoH3 and Zr2CoH5) and titanium cobalt hydride (Ti2CoH3) in corrosive media

L82 ANSWER 35 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Catalyst for purification of exhaust gas and **process** for **production** thereof

L82 ANSWER 36 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Kinetic characteristics of the ion-exchange **process** on **zirconium** phosphate **prepared** by the sol-gel-method

L82 ANSWER 37 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Process** and catalysts for **manufacture** of malonaldehyde derivatives

L82 ANSWER 38 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Ion exchange inorganic films made up of layered structure insoluble acid salts of tetravalent metals and/or their derivatives and **process** for the **preparation** of the same

L82 ANSWER 39 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Modified condensation synthetic resins

L82 ANSWER 40 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Granular **zirconium** hydrous oxide ion exchangers such as

zirconium phosphate and hydrous **zirconium** oxide, particularly for column use

L82 ANSWER 41 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
TI Separation of plutonium

=> d all 1-41 l82
YOU HAVE REQUESTED DATA FROM FILE 'WPIX, CAPLUS' - CONTINUE? (Y)/N:y

L82 ANSWER 1 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:39569 CAPLUS
DN 140:61808
ED Entered STN: 16 Jan 2004
TI Production of **zirconium** phosphate and its use
IN Bortun, Anatoly I.; Butler, Clive J.
PA USA
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C01B025-37
NCL 423311000
CC 49-5 (Industrial Inorganic Chemicals)
Section cross-reference(s): 48, 67
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004009110	A1	20040115	US 2002-195630	20020715
	WO 2004007359	A1	20040122	WO 2003-US20156	20030625

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-195630 A 20020715
AB A **zirconium** phosphate compound having the formula Zr(HPO4)2.nMexO.mH2O, wherein n=0-1.2, m=0.5-3.0, x=0.5-1 and Me is NH4, Li, Na, K, Cs, Mg, Ca, Sr, or Ba is prepared by mixing a water insol. **zirconium** compound with an aqueous solution of an acidic phosphorus and sulfate containing reagent to produce a reaction mixture having a P/Zr ratio of (2.0-2.5):1, and reacting the mixture at 80° to b.p. for 1-3 h. The acidic phosphorous and sulfate containing reagent can contain phosphoric acid, an alkali metal or ammonium monohydrogen phosphate, sulfuric acid, or an

alkali metal or ammonium sulfate. The **zirconium** compound can be a basic **zirconium** sulfate, a basic **zirconium** carbonate, or a hydrous **zirconium** oxide having an average particle size of 50-60 μ. The **zirconium** phosphate exhibits an affinity for Co2+ characterized by Kd ≥ 500 mL/g and for Ni2+ characterized by Kd ≥ 400 mL/g at LOD 18 %, based on a simulant solution of 0.5 M NaNO3 + 0.001 M Co(NO3)2 + 0.001 M Ni(NO3)2 and can be used as an ion exchanger. The compound can also be used as a catalyst or catalyst support.

ST **zirconium** phosphate prepn cation exchanger cobalt nickel; catalyst **zirconium** phosphate prepn

IT Catalyst supports
Catalysts
Cation exchangers
(production of **zirconium** phosphate and its use)

IT **13765-95-2P**, **Zirconium** phosphate
RL: CAT (Catalyst use); NUU (Other use, unclassified); **SPN (Synthetic preparation)**; **PREP (Preparation)**; USES (Uses)
(production of **zirconium** phosphate and its use)

IT 7664-38-2, Phosphoric acid, reactions 7664-38-2D, Phosphoric acid, alkali metal or ammonium salts 7664-93-9, Sulfuric acid, reactions 7664-93-9D, Sulfuric acid, alkali metal or ammonium salts 12164-98-6, Hydrous **zirconium** oxide **15667-84-2**, Basic **zirconium** carbonate 84583-91-5, Basic **zirconium** sulfate
RL: RCT (Reactant); RACT (Reactant or reagent)
(production of **zirconium** phosphate and its use)

IT 14701-22-5, Nickel, ion (Ni2+), processes 22541-53-3, Cobalt(2+), processes
RL: REM (Removal or disposal); PROC (Process)
(production of **zirconium** phosphate and its use)

L82 ANSWER 2 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:39468 CAPLUS
DN 140:61807
ED Entered STN: 16 Jan 2004
TI Synthesis of **zirconium** phosphate and hafnium phosphate and their uses
IN Bortun, Anatoly I.; Butler, Clive J.
PA USA
SO U.S. Pat. Appl. Publ., 16 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C01B025-37
ICS B01D015-00
NCL 210660000; 423311000
CC 49-5 (Industrial Inorganic Chemicals)
Section cross-reference(s): 48, 67
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004007532	A1	20040115	US 2002-195876	20020715

WO 2004007360 A1 20040122 WO 2003-US20159 20030625
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI US 2002-195876 A 20020715

AB **Zirconium** phosphate is prepared by **heating** an combining a suspension of a **zirconium** compound and an aqueous solution of a phosphorus-containing reagent having a pH of 3.0-6.0, **heating** the mixture at at least 120° at autogenous pressure not exceeding 100 psi to form a reaction product, treating the reaction product with acid at ≥ 60°, and neutralizing, **filtering**, **washing** and drying the reaction product. The **zirconium** compound can be **zirconium** basic carbonate, **zirconium** tetrachloride, **zirconium** oxychloride, **zirconium** acetate, **zirconium** nitrate, ammonium **zirconium** carbonate, potassium **zirconium** carbonate, preferably hydrous **zirconium** oxide, **zirconium** sulfate, **zirconium** basic sulfate, or **zirconium** phosphate having a particle size of 50-60 μ. The phosphorus-containing reagent contains phosphoric acid, and/or a sodium, potassium or ammonium salt of phosphoric acid, and a soluble silica, such as sodium metasilicate, sodium orthosilicate, or colloidal silica. The acid can be HCl, HNO3, H2SO4, HBr, HClO, HClO4, CH3COOH, or CHOOH. The neutralizing agent can be NaOH, NaHCO3, Na2CO3. The **zirconium** phosphate of H form is characterized by a 31P NMR spectra comprising peaks at -4.7 ppm, -12.8 ppm and -17.0 ppm. The **zirconium** phosphate has a surface area of at least 300 m2/g, a pore size distribution of 20-40 Å, and it comprises hexagonal-shaped openings ranging in size from 50-500 nm. The **zirconium** phosphate exhibits an affinity towards NH4+, K+, and Cs+ ions characterized by a Kd value of at least 120 mL/g and an ion exchange capacity of ≥ 0.70 mmol NH4+/g from a physiol. solution simulant. Hafnium phosphate is prepared having a stability against **moisture** loss characterized by a capacity and Kd value for NH4+ ions from a physiol. simulant solution, which do not decrease more than 20 % across a **moisture** content LOD (loss on drying) of the hafnium phosphate ranging from 0≤LOD≤18 % across a **temperature** range of up to 200°. **Zirconium** phosphate and hafnium phosphate can be used as ion exchangers, catalysts, or catalyst supports.

ST **zirconium** hafnium phosphate prepn cation exchanger catalyst support

IT Catalyst supports
Catalysts
Cation exchangers
(synthesis of **zirconium** phosphate and hafnium phosphate and

their uses)

IT **13765-95-2P**, **Zirconium** phosphate 27607-66-5P, Hafnium phosphate
RL: CAT (Catalyst use); NUU (Other use, unclassified); PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent); USES (Uses)
(synthesis of **zirconium** phosphate and hafnium phosphate and their uses)

IT 64-18-6, Formic acid, reactions 64-19-7, Acetic acid, reactions 144-55-8, **Sodium carbonate** (NaHCO3), reactions **497-19-8**, **Sodium carbonate** (Na2CO3), reactions **1310-73-2**, Sodium hydroxide (NaOH), reactions 1314-23-4, **Zirconium** oxide, reactions 6834-92-0, Sodium metasilicate 7585-20-8, **Zirconium** acetate 7601-90-3, Perchloric acid, reactions 7631-86-9, Silica, reactions 7647-01-0, Hydrochloric acid, reactions 7664-38-2, Phosphoric acid, reactions 7664-38-2D, Phosphoric acid, sodium, potassium or ammonium salt, reactions 7664-93-9, Sulfuric acid, reactions 7697-37-2, Nitric acid, reactions 7699-43-6, **Zirconium** oxychloride 7790-92-3, Hypochlorous acid 10026-11-6, **Zirconium** tetrachloride 10035-10-6, Hydrogen bromide, reactions 13746-89-9, **Zirconium** nitrate 14644-61-2, **Zirconium** sulfate **15667-84-2**, **Zirconium** basic carbonate 15859-24-2 22829-17-0, Ammonium **zirconium** carbonate 23570-56-1, Potassium **zirconium** carbonate 84583-91-5, **Zirconium** basic sulfate
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of **zirconium** phosphate and hafnium phosphate and their uses)

L82 ANSWER 3 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:39467 CAPLUS
DN 140:61780
ED Entered STN: 16 Jan 2004
TI Syntheses of hydrous **zirconium** oxide, hydrous hafnium oxide and their uses
IN Bortun, Anatoly I.; Butler, Clive J.
PA USA
SO U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C01G025-02
NCL 210660000; 423608000; 423085000
CC 49-3 (Industrial Inorganic Chemicals)
Section cross-reference(s): 48, 67
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004007531	A1	20040115	US 2002-195875	20020715
	WO 2004007372	A1	20040122	WO 2003-US20158	20030625

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-195875 A 20020715

AB Hydrous **zirconium** oxide is prepared by reacting a **zirconium** compound with a mixture of an alkali metal hydroxide and an alkali metal sulfate or phosphate at a SO4/Zr and PO4/Zr ratio of (0.2-0.7):1 at 80-150° and treating the reaction product with an acid having a pH of 4-8. The acid can be HCl, HNO3, HBr, HClO, HClO4, CH3COOH, or CHOOH. The **zirconium** compound can be **zirconium** tetrachloride, **zirconium** oxychloride, **zirconium** acetate, **zirconium** nitrate, ammonium **zirconium** carbonate, potassium **zirconium** carbonate, preferably **zirconium** oxide, **zirconium** sulfate, **zirconium** basic sulfate, or **zirconium** phosphate. Hydrous hafnium oxide is prepared analogously. The prepared hydrous oxides are suitable for use as ion exchangers, catalysts, or catalyst supports. The hydrous oxides are characterized by at least one of the following: stability against **moisture** loss, a surface area of 300-400 m2/g, a pore size distribution of 20-40 Å, an affinity towards anions, such as PO4 , HPO4 , H2PO4 , AsO4, HAsO4 , H2AsO4 and AsO3, and oxoanions of Cr, Se, B, Mo, and W, and/or a resistance against poisoning by SiO3 and SO4.

ST hydrous **zirconium** hafnium oxide prepn anion exchanger catalyst

IT Anion exchangers
Catalyst supports
Catalysts
(syntheses of hydrous **zirconium** oxide, hydrous hafnium oxide and their uses)

IT 12164-98-6P, Hydrous **zirconium** oxide 328385-09-7P, Hafnium oxide, hydrate
RL: CAT (Catalyst use); NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(syntheses of hydrous **zirconium** oxide, hydrous hafnium oxide and their uses)

IT 1310-58-3, Potassium hydroxide, reactions 1310-65-2, Lithium hydroxide **1310-73-2**, Sodium hydroxide, reactions 1314-23-4, **Zirconium** oxide, reactions 7585-20-8, **Zirconium** acetate 7664-38-2, Phosphoric acid, reactions 7664-93-9, Sulfuric acid, reactions 7697-37-2, Nitric acid, reactions 7699-43-6, **Zirconium** oxychloride 10026-11-6, **Zirconium** tetrachloride 13746-89-9, **Zirconium** nitrate **13765-95-2**, **Zirconium** phosphate 14644-61-2, **Zirconium** sulfate 22829-17-0, Ammonium **zirconium** carbonate 23570-56-1, Potassium **zirconium** carbonate 84583-91-5, **Zirconium** basic sulfate

RL: RCT (Reactant); RACT (Reactant or reagent)
(syntheses of hydrous **zirconium** oxide, hydrous hafnium oxide and their uses)

IT 7439-98-7D, Molybdenum, oxoanions 7440-33-7D, Tungsten, oxoanions 7440-42-8D, Boron, oxoanions 7440-47-3D, Chromium, oxoanions 7782-49-2D, Selenium, oxoanions 14066-19-4, Hydrogenphosphate, **processes** 14066-20-7, Dihydrogenphosphate, **processes** 14265-44-2, Phosphate, **processes** 15502-74-6, Arsenite 15584-04-0, Arsenate
RL: REM (Removal or disposal); PROC (Process)
(**syntheses** of hydrous **zirconium** oxide, hydrous hafnium oxide and their uses)

L82 ANSWER 4 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:696794 CAPLUS
DN 139:232440
ED Entered STN: 05 Sep 2003
TI Hybrid membrane, method for producing the same, and use of said membrane
IN Hennige, Volker; Hying, Christian; Hoerpel, Gerhard
PA Creavis Gesellschaft fuer Technologie und Innovation m.b.H., Germany
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT Patent
LA German
IC ICM B01D069-10
ICS B01D069-12; B01D053-22
CC 48-1 (Unit Operations and Processes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003072232	A1	20030904	WO 2003-EP330	20030115
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10208278	A1	20030904	DE 2002-10208278	20020226
PRAI DE 2002-10208278	A	20020226		

AB The hybrid membrane combines the advantages of inorg. membranes, such as solvent resistance and stability, with the advantages of organic membrane materials. The hybrid membrane is composed of a ceramic support layer that is applied to a support provided with polymer fibers and an organic-selective separation layer. The separation properties of the membrane can be specifically adjusted by varying the polymers or the treatment of the polymer materials or by the production conditions of the polymeric selective

separation layer.

ST composite membrane ceramic polymer

IT Acrylic fibers, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(Viledon 1773, fleece support; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Ceramic membranes
Ice
Ultrafilters
Water vapor
(composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Polyoxyalkylenes, processes
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Acids, reactions
Alcohols, reactions
Polyester fibers, reactions
Polyesters, reactions
Polyethers, reactions
Polyurethanes, reactions
Y zeolites
RL: RCT (Reactant); RACT (Reactant or reagent)
(composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Membranes, nonbiological
(composite; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Polyolefins
RL: RCT (Reactant); RACT (Reactant or reagent)
(fibers, fleece; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Acrylic polymers, reactions
Fluoropolymers, reactions
Polyamides, reactions
Polyimides, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(fibers; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Polyesters, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(fleece support; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse

osmosis, and in gas sepns.)

IT Fluoropolymers, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(fleece; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Synthetic polymeric fibers, uses
RL: DEV (Device component use); USES (Uses)
(membrane support; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Reactors
(membrane; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Pervaporation
(membranes; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT **Filters**
(microfilters, membranes; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Membrane **filters**
(nanofiltration; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT Membranes, nonbiological
(reverse-osmosis; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 152791-95-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(coating; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 111-50-2, Adipic acid dichloride 124-09-4, Hexamethylenediamine, reactions 7585-39-9, β-Cyclodextrin 9002-89-5, Polyvinyl alcohol 9016-00-6, PDMS
RL: RCT (Reactant); RACT (Reactant or reagent)
(coating; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 75-05-8, Acetonitrile, processes 7732-18-5, Water, processes 25322-68-3, Polyethylene glycol
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 64-17-5, Ethanol, reactions 78-10-4, Tetraethoxysilane 556-28-5, Yttrium carbonate 1314-23-4, **Zirconium** oxide (ZrO2), reactions

1314-36-9, Yttrium oxide, reactions 1332-29-2, Tin oxide 2031-67-6, Methyltriethoxysilane 2530-83-8, Dynasylan GLYMO 7429-90-5D, Aluminum, alcoholates or halides 7440-21-3D, Silicon, alcoholates or halides 7440-31-5D, Tin, alcoholates or halides 7440-32-6D, Titanium, alcoholates or halides 7440-65-5D, Yttrium, alcoholates or halides 7440-67-7D, **Zirconium**, alcoholates or halides 7631-86-9, Silica, reactions 7647-01-0, Hydrochloric acid, reactions 9003-53-6, Polystyrene 9004-35-7, Cellulose acetate 9004-67-5, Methylcellulose 10361-93-0, Yttrium nitrate 13463-67-7, Titanium dioxide, reactions 13473-90-0, Aluminum nitrate 13746-89-9, **Zirconium** nitrate 13860-02-1, Titanium nitrate 14455-29-9, Aluminum carbonate **15667-84-2**, **Zirconium** carbonate 41480-79-9, Tin nitrate 45189-55-7 76214-28-3, Titanium carbonate 150815-34-2 210893-37-1 497257-85-9, V 93 (Crosslinker)
RL: RCT (Reactant); RACT (Reactant or reagent)
(composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 108-88-3, Toluene, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 9003-31-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(ex 2d; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 9002-84-0, Polytetrafluoroethylene 9002-88-4, Polyethylene 9003-07-0, Polypropylene
RL: RCT (Reactant); RACT (Reactant or reagent)
(fibers; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 25038-59-9P, PET (polyester), preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(fleece support; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 24937-79-9, PVDF 25014-41-9, PAN
RL: RCT (Reactant); RACT (Reactant or reagent)
(fleece; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 1344-28-1, AlCoA CT3000, uses
RL: MOA (Modifier or additive use); USES (Uses)
(in polymer composite membranes; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

IT 67-66-3, Chloroform, uses 109-99-9, THF, uses **1310-73-2**, Sodium hydroxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(solvent; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, and in gas sepns.)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Creavis Tech & Innovation Gmbh; EP 1166860 A 2002 CAPLUS
(2) Davidson, A; US 5376442 A 1994 CAPLUS
(3) Ebert, K; WO 03013708 A 2003 CAPLUS
(4) Georg, S; WO 9915262 A 1999 CAPLUS
(5) John, B; WO 0021648 A 2000 CAPLUS
(6) Penth, B; WO 9962620 A 1999 CAPLUS
(7) Penth, B; WO 9962624 A 1999 CAPLUS
(8) Weizmann Kiryat Membrane Prod; EP 0532199 A 1993 CAPLUS

L82 ANSWER 5 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:678883 CAPLUS
DN 139:198296
ED Entered STN: 29 Aug 2003
TI Thermoplastic material with high barrier properties
IN Dupuy, Carole; Echalier, Bruno; Egret, Helene; Lousteau, Bertrand; Mathieu, Olivier
PA Rhodianyl, Fr.
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA French
IC ICM C08K003-32
CC 37-6 (Plastics Manufacture and Processing)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003070818	A2	20030828	WO 2003-FR584	20030221
	WO 2003070818	A3	20031113		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	FR 2836476	A1	20030829	FR 2002-2266	20020222
PRAI	FR 2002-2266	A	20020222		

AB The invention concerns materials with high barrier properties comprising a thermoplastic matrix and a filler dispersed in the form of nanoparticles with high aspect ratio. More particularly, the invention concerns the use of **zirconium** or titanium phosphate as nanoparticulate filler.

These materials are manufactured by polymerization of monomers into a thermoplastic

matrix in the presence of **zirconium** or titanium phosphate that is treated with an inorg. or organic compound that reacts with the phosphates such as NaOH, hexamethylenediamine, and caprolactam.

ST thermoplastic barrier material nanoparticulate filler **zirconium** phosphate; caprolactam treated **zirconium** phosphate nanoparticulate filler thermoplastic barrier material; hexamethylenediamine treated **zirconium** phosphate nanoparticulate filler thermoplastic barrier material; alkali treated **zirconium** phosphate nanoparticulate filler thermoplastic barrier material; titanium phosphate nanoparticulate filler thermoplastic barrier material

IT Amines, uses
Amino acids, uses
Lactams
RL: MOA (Modifier or additive use); USES (Uses)
(filler treatment; thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT Nanocomposites
(thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT Polyamides, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)
(thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT Polyamides, uses
Polyesters, uses
RL: POF (Polymer in formulation); USES (Uses)
(thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT Plastics, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(thermoplastics; thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT 105-60-2, Caprolactam, uses 124-09-4, Hexamethylenediamine, uses **1310-73-2**, Sodium hydroxide, uses 1477-55-0, 1,3-Benzenedimethanamine 15520-10-2, 2-Methylpentamethylenediamine
RL: MOA (Modifier or additive use); USES (Uses)
(filler treatment; thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT **13772-29-7P**, **Zirconium** phosphate
RL: **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)
(thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT 25035-04-5P, Nylon 11 25038-54-4P, Nylon 6, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)
(thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT 13765-94-1
RL: MOA (Modifier or additive use); USES (Uses)
(thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

IT 9003-53-6, Polystyrene 9011-14-7, PMMA 24937-16-4, Nylon 12 24937-78-8, EVA 25038-59-9, PET polymer, uses 25038-74-8 32131-17-2, Nylon 66, uses
RL: POF (Polymer in formulation); USES (Uses)
(thermoplastic material with high barrier properties containing **zirconium** or titanium phosphate nanoparticulate fillers with high aspect ratio)

L82 ANSWER 6 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:571279 CAPLUS
DN 139:109774
ED Entered STN: 25 Jul 2003
TI Proton-conductive gel, proton conductor, and **processes** for **producing** these
IN Kasuga, Toshihiro
PA Nagoya Industrial Science Research Institute, Japan
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM H01B001-06
ICS H01M008-02
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 52
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003060925	A1	20030724	WO 2002-JP13724	20021226
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2003217339	A2	20030731	JP 2002-7686	20020116
EP 1400986	A1	20040324	EP 2002-793428	20021226
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE,				

LT, LV, FI, RO, MK, CY, AL, BG, CZ, EE
PRAI JP 2002-7686 A 20020116
WO 2002-JP13724 W 20021226
AB A proton-conductive gel, which has a high ionic conductivity at around room temperature, can be easily made to have a reduced thickness and an increased size, and is capable of imparting excellent suitability for practical use to products such as a fuel cell. The gel comprises a dispersed phase comprising mol. chains of a phosphoric acid salt and a dispersion medium comprising H2O.
ST protonic conductive gel cond phosphate; conductor proton fuel cell
IT Phosphates, **processes**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(glass **powders**; **manufacture** of proton-conductive gels and pellet proton conductors for)
IT Pellets
(manufacture of proton-conductive gels and pellet proton conductors)
IT Fuel cells
(manufacture of proton-conductive gels and pellet proton conductors for)
IT Hydrogels
(manufacture of proton-conductive gels and proton conductors)
IT Glass **powders**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(phosphate; manufacture of proton-conductive gels and pellet proton conductors for)
IT Ionic conductors
(protonic; manufacture of proton-conductive gels and proton conductors)
IT 7758-23-8 13092-66-5 **13772-29-7**, **Zirconium** phosphate
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(glass **powders**; manufacture of proton-conductive gels and proton conductors)
IT 7732-18-5, Water, **processes**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**manufacture** of proton-conductive gels and proton conductors)
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Abe, Y; JP 08-119612 A 1996 CAPLUS
(2) Abe, Y; EP 702376 A1 1996 CAPLUS
(3) Fuji Electric Co Ltd; JP 57-77047 A 1982 CAPLUS
(4) Kaneka Corp; JP 2001307752 A 2001 CAPLUS
(5) Kasuga, T; Chemistry Letters 2001, P820 CAPLUS
(6) Mitsubishi Chemical Corp; JP 2001143723 A 2001 CAPLUS
(7) Mitsui Toatsu Chemicals Inc; JP 62-138314 A 1987 CAPLUS
(8) Toshiba Corp; JP 2000357524 A 2000 CAPLUS

L82 ANSWER 7 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:836324 CAPLUS
DN 139:311901
ED Entered STN: 24 Oct 2003
TI **Process** for **preparing** reactive compositions for fluid treatment
IN Hughes, Kenneth D.
PA USA
SO U.S. Pat. Appl. Publ., 19 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C02F001-28
NCL 210670000; 210681000
CC 61-5 (Water)
Section cross-reference(s): 35, 56
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003196960	A1	20031023	US 2002-125072	20020417
WO 2003089113	A1	20031030	WO 2003-US11960	20030417

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-125072 A 20020417
AB A method and device for **filtration** and/or **purification** of fluids, including water or other solns. containing microbiol. and chemical contaminants, such as fluids containing metals, water treatment chems., reactive chems. and microorganisms, where the fluid is passed through a composite material composed of fluid treatment media with or without a binder matrix in which the **filtration** media, binder, or support structures, or a combination thereof contains a surface treatment. The composite material may be regenerated by sterilization, wherein the sterilization comprises exposing the composite material to elevated temperature, pressure, radiation levels, chemical oxidants or reductants, or combinations thereof.
ST reactive composite fluid treatment **filtration** water wastewater **purifn**; **purifn** air waste gas reactive composite **filtration**; blood fermn broth pharmaceutical biotechnol reactive composite **filtration**
IT Polysaccharides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(as binder or surface modifying agent; **process** for

preparing reactive composites for fluid treatment by **filtration**)

IT Conducting polymers
Superabsorbents
(as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Acrylic polymers, uses
Collagens, uses
Fluoropolymers, uses
Gelatins, uses
Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Polysiloxanes, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(as sizing agent or surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(biodegradable, gelling and/or absorbent polymers, as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Polyamines
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(blends with poly(DADMAC) or inorgs., surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Charcoal
RL: TEM (Technical or engineered material use); USES (Uses)
(bone; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Fermentation
(broth; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Resins
RL: TEM (Technical or engineered material use); USES (Uses)
(cellulosic, as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(derivs., as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Water **purification**
(**filters**; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Carbonates, reactions
Peroxides, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)

(for regeneration of composite material; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Rice (Oryza sativa)
(hulls, silica source; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Porous materials
(in block or sheet form; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Natural fibers
RL: TEM (Technical or engineered material use); USES (Uses)
(in form of fibers, string or yarn; **process** for **prepg** . reactive composites for fluid treatment by **filtration**)

IT Cotton
(including bleached cotton; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Anesthetics
(inhalation; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Clays, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(montmorillonitic; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Oxidation
Reduction
(of composite material in the presence of water or aqueous fluid; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Acids, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(organic, as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Minerals, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphate; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Amines, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyamines, nonpolymeric, as binder or surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Silanes
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polyborosilanes, surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Alcohols, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyhydric, as binder or surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Aluminates
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polyorganoaluminates, surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)
IT Zirconates
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polyorganozirconates, surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)
IT Air **purification**
Drinking waters
(**process** for **preparing** reactive composites for fluid treatment by **filtration**)
IT Acrylic fibers, uses
Alloys, uses
Apatite-group minerals
Bauxite
Bentonite, uses
Kaolin, uses
Phosphate rock
Phosphates, uses
Polyamide fibers, uses
Polyester fibers, uses
Polypropene fibers, uses
Rayon, uses
Sand
Zeolites (synthetic), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**process** for **preparing** reactive composites for fluid treatment by **filtration**)
IT Synthetic fibers
RL: TEM (Technical or engineered material use); USES (Uses)
(quartz; **process** for **preparing** reactive composites for fluid treatment by **filtration**)
IT Bacillariophyta
Solid wastes
(silica source; **process** for **preparing** reactive composites for fluid treatment by **filtration**)
IT Synthetic fibers
RL: TEM (Technical or engineered material use); USES (Uses)
(silica; **process** for **preparing** reactive composites for fluid treatment by **filtration**)
IT Clays, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(smectitic; **process** for **preparing** reactive composites for fluid treatment by **filtration**)
IT Water **purification**
(sterilization and disinfection; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Humic acids
Peptides, uses
Polycarbosilanes
Polysilanes
Proteins
Silazanes
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Ion exchangers
(synthetic; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(thermoplastics, as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT Sterilization and Disinfection
(to regenerate composite material; **process** for **prepg** . reactive composites for fluid treatment by **filtration**)

IT 7440-44-0, Carbon, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(activated; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 1309-37-1, Ferric oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(amorphous, hydrous; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 9003-05-8 9005-25-8, Starch, uses 26062-79-3, Poly-(diallyldimethylammonium chloride)
RL: TEM (Technical or engineered material use); USES (Uses)
(as binder or surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 1398-61-4, Chitin 9000-69-5, Pectins 9002-86-2, Polyvinylchloride 9002-88-4, Polyethylene 9002-89-5 9003-01-4, Polyacrylic acid 9003-07-0, Polypropylene 9003-20-7, Polyvinylacetate 9003-47-8, Poly-vinylpyridine 9003-53-6, Polystyrene 9004-32-4, Carboxymethyl cellulose sodium salt 9005-32-7, Alginic acid 11138-66-2, Xanthan 25014-41-9, Polyacrylonitrile 25322-68-3 25322-68-3D, derivs. 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26100-51-6, Polylactic acid 26780-50-7, Lactide glycolide copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-66-6, Zinc, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(as reduced metal; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 919-30-2, Aminopropyltriethoxysilane

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(as surface modifying or sizing agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 9011-14-7, Poly-methylmethacrylate
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(cationic, surface modifying agent; **process** for **prepg**. reactive composites for fluid treatment by **filtration**)

IT 15438-31-0, Ferrous ion, **processes** 20074-52-6, Ferric ion, **processes**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PROC (Process)
(dissolved; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 7782-50-5, Chlorine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(for regeneration of composite material; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 9000-07-1, Carrageenan
RL: TEM (Technical or engineered material use); USES (Uses)
(isolated from seaweeds, as binder; **process** for **prepg**. reactive composites for fluid treatment by **filtration**)

IT 9004-34-6, Cellulose, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(natural and synthetically modified, as binder; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 10024-97-2, Nitrous oxide, **processes**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(**process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 7783-06-4, HYdrogen sulfide, **processes** 17428-41-0, Arsenic ion as5+, **processes** 22541-54-4, Arsenic ion as3+, **processes**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PROC (Process)
(**process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 7782-50-5D, Chlorine, compds.
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process)
(**process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 75-01-4D, Vinylchloride, functionalized 79-10-7D, Acrylic acid, functionalized 100-42-5D, Styrene, functionalized 471-34-1, Calcium carbonate, uses 546-93-0, Magnesium carbonate 1305-62-0, Calcium

hydroxide, uses 1305-78-8, Calcium oxide, uses 1309-42-8, Magnesium hydroxide 1309-48-4, Magnesium oxide, uses 1310-14-1, Goethite 1314-13-2, Zinc oxide, uses 1317-57-3, Glauconite 1317-60-8, Hematite, uses 1321-74-0D, Divinylbenzene, functionalized 1332-37-2, Iron oxide, uses 1335-30-4, Aluminum silicate 1343-88-0, Magnesium silicate 1344-28-1, Aluminum oxide, uses 1344-69-0, Copper hydroxide 1344-70-3, Copper oxide 1344-95-2, Calcium silicate 7631-86-9, Silicon oxide, uses 7757-93-9 7758-87-4 7779-90-0, Zinc phosphate 7784-09-0, Silver phosphate 7784-30-7, Aluminum phosphate 7790-76-3 10043-83-1, Magnesium phosphate 10103-46-5, Calcium phosphate 10103-48-7, Copper phosphate 10124-54-6, Manganese phosphate 10290-71-8, Iron carbonate 10402-24-1, Iron phosphate 11113-66-9, Iron hydroxide 11129-60-5, Manganese oxide 11129-61-6, Manganese silicate 12022-37-6, Lepidocrocite 12134-66-6, Maghemite 12173-10-3, Clinoptilolite 12396-03-1D, Octaphosphoric acid, calcium salts 12673-39-1, Iron silicate 13463-67-7, Titanium oxide, uses 13477-39-9, Calcium metaphosphate **13765-95-2**, **Zirconium** phosphate 14455-29-9, Aluminum carbonate 14808-60-7, Quartz, uses 14854-26-3, Pyrolusite 18358-13-9D, Methacrylate, functionalized 21645-51-2, Aluminum hydroxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 124-38-9P, Carbon dioxide, processes 7440-37-1P, Argon, processes 7727-37-9P, Nitrogen, processes 7782-44-7P, Oxygen, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PYP (Physical process); PREP (Preparation); PROC (Process)
(purge gas, **purification** of; **process** for **prepg**
. reactive composites for fluid treatment by **filtration**)

IT 30581-59-0, Vinylpyrrolidone dimethylaminoethylmethacrylate copolymer
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(quaternized, surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 75-94-5, Vinyltrichlorosilane 78-08-0, Vinyltriethoxysilane 107-37-9, Allyltrichlorosilane 1067-47-6, 3-Cyanopropyltriethoxysilane 1071-27-8, 3-Cyanopropyltrichlorosilane 1558-25-4, Chloromethyltrichlorosilane 1760-24-3, N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane 2530-83-8, 3-Glycidoxypropyltrimethoxysilane 2530-87-2, 3-Chloropropyl-trimethoxysilane 2550-04-1, Allyltriethoxysilane 2550-06-3, 3-Chloropropyltrichlorosilane 2551-83-9, Allyltrimethoxysilane 2768-02-7, Vinyltrimethoxysilane 3085-30-1, Aluminum butoxide 4130-08-9, Vinyltriacetoxysilane 4325-85-3, Tristrimethylsiloxyboron 4369-14-6, 2-Propenoic acid, 3-(trimethoxysilyl)propyl ester 4420-74-0, 3-Mercaptopropyltrimethoxysilane 9002-98-6 10497-05-9, Tristrimethylsilylphosphate 13688-90-9, (p-Chloromethyl)phenyltrichloros ilane) 13822-56-5, 3-Aminopropyltrimethoxy silane 13883-39-1, 3-Bromopropyl trichlorosilane 14782-75-3, Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(2-propanolato)-, (T-4)-

14814-09-6, 3-Mercaptopropyltriethoxysilane 14867-28-8, 3-Iodopropyl trimethoxysilane 15267-95-5, Chloromethyltriethoxysilane 18147-81-4, 2-(Carbomethoxy) ethyltrichlorosilane 18279-67-9, 2-Chloroethyltriethoxysilane 18586-39-5, 2-(Diphenylphosphino) ethyltriethoxysilane 22464-99-9, **Zirconium** 2-ethylhexanoate 23779-32-0, N-(Triethoxysilylpropyl) urea 24413-04-5, (p-Chloromethyl)phenyltrimethoxysilane 24801-88-5, 3-Isocyanatopropyltriethoxysilane 27326-65-4, 2-(Trimethoxysilyl) ethyl-2-pyridine 27668-52-6 30110-74-8, Tetramethyldisiloxane 30110-74-8D, Tetramethyldisiloxane, derivs. 35141-36-7, N-Trimethoxysilylpropyl-n,n,n-trimethyl ammonium chloride 38595-89-0, 3-Acryloxypropyltrichlorosilane 51826-90-5, 3-Bromopropyl-trimethoxysilane 64426-41-1 68128-25-6, 1-Trimethoxysilyl-2-(m,p-chloromethyl)-phenylethane 79793-00-3, 2-(4-Chlorosulfonylphenyl) ethyltrichlorosilane 80906-67-8, N-(3-Trimethoxysilylpropyl)pyrrole 95144-24-4, 1H-Imidazolium, 1-ethenyl-3-methyl-, chloride, polymer with 1-ethenyl-2-pyrrolidinone 97171-79-4, **Zirconium**(IV) dimethacrylate 126519-89-9, 2-(4-Chlorosulfonylphenyl) ethyltrimethoxysilane 128850-89-5
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(surface modifying agent; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

IT 14333-13-2, Permanganate
RL: RCT (Reactant); RACT (Reactant or reagent)
(used to form manganese oxide in composite or for regeneration of composite; **process** for **preparing** reactive composites for fluid treatment by **filtration**)

L82 ANSWER 8 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:783145 CAPLUS
DN 139:293418
ED Entered STN: 07 Oct 2003
TI Sustained-release porous fine particles and their manufacture
IN Fujii, Naoyuki; Nakayama, Takashi
PA Enex Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A61K047-04
ICS A61J003-07; A61K009-14; A61K047-10; A61K047-24; A61K047-30; A61K047-32; A61K047-34; A61K047-38; A61L009-01
CC 41-1 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 5, 7, 17, 37, 62

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003286196	A2	20031007	JP 2002-90755	20020328
PRAI JP 2002-90755		20020328		

AB Title particles comprise dyes, fragrant materials, pesticides,

pharmaceuticals, etc., encapsulated by permeable substances and supported on porous fine particles, and are manufactured by soaking porous fine particles in solns. containing the dyes, etc., and permeable substances, followed by removing the solvents. Thus, SE MCB-FP/2 (porous silica fine particles) was impregnated with aqueous solution of Direct Blue 4BL (dye), evaporated in vacuo, impregnated with aqueous gelatin solution, and evaporated in vacuo to give porous fine particles, which released the dye much more slowly than controls without gelatin.

ST sustained release gelatin silica encapsulation dye; porous particle silica impregnation dye sustained release

IT Tannins
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(Zn complexes, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Silanes
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(alkoxy, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Cosmetics
(baby **powders**; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Food
(dyes; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Chamaecyparis obtusa
(extract; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Dyes
(food; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Polyvinyl acetals
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(formals, porous fine particles; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Styrene-butadiene rubber, uses
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(hydrogenated, block, triblock, Kraton GRP 6924, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Antistatic agents
Corrosion inhibitors
Drugs
Dyes
Encapsulation
Impregnation
Odor and Odorous substances
Perfumes
Pesticides
(manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Polyurethanes, uses
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Epoxy resins, uses
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Enzymes, uses
RL: FFD (Food or feed use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Porous materials
(particulate; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Aminoplasts
Polysiloxanes, uses
Shellac
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES

(Uses)
(permeable substance; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Glass ceramics
(permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Acrylic polymers, uses
Gelatins, uses
Polyamides, uses
Polyesters, uses
Tannins
Waxes
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Silanes
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(polyalkoxy, permeable substance; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Carboxylic acids, uses
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(polycarboxylic, salts, with alkaline earth metals, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Polyurethanes, uses
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(polyester-, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT Flocculants
(polymeric, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine

particles)
IT Phenols, uses
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(polyphenols, nonpolymeric, metal complexes, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)
IT Aminoplasts
Apatite-group minerals
Natural fibers
Phenolic resins, uses
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(porous fine particles; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)
IT Particles
(porous; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)
IT Polyolefins
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(styrene-based, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)
IT Drug delivery systems
(sustained-release; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)
IT 12217-57-1, C.I. Direct Blue 200
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(Direct Blue 4BL; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)
IT 3844-45-9, Food Blue Dye Number 1
RL: FFD (Food or feed use); PEP (Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process); USES (Uses)
(Food Blue Dye Number 1; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)
IT 87-99-0, Xylitol
RL: FFD (Food or feed use); PEP (Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process);

USES (Uses)
(manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT 50-81-7, L-Ascorbic acid, **processes** 59-02-9, α-Tocopherol
RL: FFD (Food or feed use); PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(**manufacture** of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT 57-13-6, Urea, uses
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT 57-11-4, Stearic acid, uses 78-10-4, Tetraethoxysilane 557-05-1, Zinc Stearate 681-84-5, Tetramethoxysilane 9002-18-0, Agar 9002-86-2, PVC 9003-08-1, Melamine resin 9004-70-0, Cellulose nitrate 12680-46-5, Propyl silicate 24937-78-8, Ethylene-vinyl acetate copolymer 28211-18-9, Antaron V 220 37317-24-1, Butyl silicate 609337-40-8, Glasca T 8001 609337-41-9, Glasca H 551 609337-42-0, SE Binder 9300
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(permeable substance; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT 9004-34-6D, Cellulose, derivs.
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT 7631-86-9, SE MCB-FP/2, uses
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(porous fine particles; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT 1344-28-1, Alumina, uses 1344-95-2, Calcium silicate 9002-88-4, Polyethylene 9004-34-6, Cellulose, uses 9011-05-6, Urea resin **13765-95-2, Zirconium** phosphate
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use);

PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(porous fine particles; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

IT 9003-55-8
RL: AGR (Agricultural use); COS (Cosmetic use); FFD (Food or feed use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(styrene-butadiene rubber, hydrogenated, block, triblock, Kraton GRP 6924, permeable substances; manufacture of sustained-release materials encapsulated by permeable substances and supported on porous fine particles)

L82 ANSWER 9 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:929342 CAPLUS
DN 139:397448
ED Entered STN: 28 Nov 2003
TI Nickel-containing sorbent and process for **purification** of a gas or liquefied gas
IN Hilscher, Willi
PA Messer Griesheim G.m.b.H., Germany
SO Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM B01D053-02
ICS C01B021-04; C01B023-00; B01J020-06; B01J023-755
CC 48-1 (Unit Operations and Processes)
Section cross-reference(s): 67
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1364697	A1	20031126	EP 2003-11521	20030521
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10224802	A1	20031211	DE 2002-10224802	20020523
PRAI DE 2002-10224802	A	20020523		

AB The **purification** agent for removal of O2, H2, CO and/or CO2 from a gas or liquefied gas, especially N2, He, Ar, Kr, or Xe, comprises Ni (>5 weight%) on an oxide support. The sorbent is prepared by a process for hydriding catalysts.
ST nickel sorbent noble gas **purifn**
IT Hydriding catalysts
(Leuna catalyst; Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)
IT Gases
Sorbents

(Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

IT Diatomite
Nitrates, uses
RL: NUU (Other use, unclassified); USES (Uses)
(Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

IT Oxides (inorganic), uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

IT Noble gases, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

IT Gases
(liquefied; Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

IT 144-55-8, Sodium bicarbonate, uses **497-19-8**, **Sodium carbonate**, uses **1310-73-2**, Sodium hydroxide, uses 1344-09-8, Waterglass 7697-37-2, Nitric acid, uses 7784-27-2, Aluminum nitrate nonahydrate 13478-00-7, Nickel nitrate hexahydrate 13826-66-9, Zirconyl nitrate 15509-05-4, Hafnium tetranitrate **36577-48-7**, **Zirconium** carbonate
RL: NUU (Other use, unclassified); USES (Uses)
(Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

IT 1313-99-1, Nickel oxide, uses 1314-23-4, **Zirconium** oxide (ZrO2), uses 1344-28-1, Aluminum oxide (Al2O3), uses 7440-02-0, Nickel, uses 7631-86-9, Silica, uses 12055-23-1, Hafnium oxide (HfO2)
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

IT 7439-90-9P, Krypton, preparation 7440-37-1P, Argon, preparation 7440-59-7P, Helium, preparation 7440-63-3P, Xenon, preparation 7727-37-9P, Nitrogen, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

IT 124-38-9, Carbon dioxide, processes 630-08-0, Carbon monoxide, processes 1333-74-0, Hydrogen, processes 7782-44-7, Oxygen, processes
RL: REM (Removal or disposal); PROC (Process)
(Ni-containing sorbent and process for **purification** of noble gases or liquefied gases)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Carter; US 3697445 A 1972
(2) Kataleuna Gmbh; DE 19909176 A 2000 CAPLUS
(3) Kataleuna Gmbh; DE 19909177 A 2000 CAPLUS
(4) The Boc Group Inc; EP 0240270 A 1987 CAPLUS

(5) Union Carbide; EP 0501391 A 1992 CAPLUS

L82 ANSWER 10 OF 41 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-722366 [68] WPIX
DNN N2003-577570 DNC C2003-198827
TI Low sidestream smoke cigarette has solid solution of particulate mixed metal oxides, e.g. high surface area cerium/**zirconium** mixed oxide, used as catalyst and adjunct.
DC D18 P15
IN BECKER, E R; CHAPMAN, S G; SNAIDR, S M; BECKER, R E
PA (RTMN) ROTHMANS BENSON & HEDGES INC
CYC 103
PI WO 2003077687 A2 20030925 (200368)* EN 42p A24D001-02
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
US 2004020504 A1 20040205 (200411) A24D001-02
ADT WO 2003077687 A2 WO 2003-CA353 20030314; US 2004020504 A1 Provisional US 2002-364137P 20020315, US 2003-388218 20030314
PRAI US 2002-364137P 20020315; US 2003-388218 20030314
IC ICM A24D001-02
AB WO2003077687 A UPAB: 20031022
NOVELTY - A low sidestream smoke cigarette has a conventional tobacco rod (54) and a combustible treatment paper (56, 58), having a sidestream smoke treatment composition comprising an oxygen storage and donor metal oxide oxidation catalyst and a non-combustible finely divided particulate adjunct for the catalyst. A solid solution of particulate mixed metal oxides is used as the catalyst and the adjunct.
USE - Used as sidestream smoke cigarette or other smoking products.
ADVANTAGE - The invention reduces visible sidestream smoke, with a modified **ash** characteristics.
DESCRIPTION OF DRAWING(S) - The figure is a perspective view of a tobacco rod having the treatment composition sandwiched, between two layers of cigarette paper.
Coating 18
Tobacco rod 54
Combustible treatment paper 56, 58
Dwg.8/9
FS CPI GMPI
FA AB; GI
MC CPI: D07-D

L82 ANSWER 11 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
AN 2002:428820 CAPLUS
DN 137:22051
ED Entered STN: 07 Jun 2002
TI Methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate

IN Wong, Raymond J.
PA Southern Ionics Incorporated, USA
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C01G025-00
CC 49-5 (Industrial Inorganic Chemicals)
Section cross-reference(s): 63

FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002044086	A2	20020606	WO 2001-US44623	20011128
WO 2002044086	A3	20030123		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 6627164	B1	20030930	US 2000-723396	20001128
AU 2002017926	A5	20020611	AU 2002-17926	20011128
EP 1345856	A2	20030924	EP 2001-998508	20011128
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2004022717	A1	20040205	US 2003-629962	20030730
PRAI US 2000-723396	A	20001128		
WO 2001-US44623	W	20011128		

AB A method of making **sodium zirconium carbonate** involves forming a mixture of **zirconium** oxychloride with **soda ash** and then **heating** at a sufficient **temperature** and for a sufficient time to form the **sodium zirconium carbonate.** Subsequent **washing** and **filtration** steps can further form parts of the process. A novel **sodium zirconium carbonate** contains 2-5 wt% Na+; 44-50 wt% ZrO2; 12-18 wt% CO32-; and 30-40 wt% H2O or LOD. Methods for making **zirconium** basic carbonate are further described which involve titrating an aqueous slurry of **sodium zirconium carbonate** to a pH of 3.5-4.0 with an acidic agent wherein the **sodium zirconium carbonate** has a **moisture** content of 15-25% LOD in solid form. The process further involves **washing** the aqueous slurry containing the formed **zirconium** basic carbonate with water. A novel **zirconium** basic carbonate is further disclosed which has a min. adsorption capacity of 30-35 mg/PO4-P/g SZC; a min. HCO3- content of from 2-4 mEq HCO3- g/SZC; a leachable Na+ content of 1.5-2.0 mEq Na+/g SZC; and/or a pH range of titrated **sodium zirconium carbonate** of 6-7.
A method of making **zirconium** phosphate is also disclosed which involves treating **sodium zirconium carbonate**

with **caustic soda** to form an alkaline hydrous **zirconium** oxide which is subsequently **heated** and mixed with phosphoric acid to obtain an acid **zirconium** phosphate which can be titrated with **caustic soda** to achieve the desired **zirconium** phosphate. Novel **zirconium** phosphates are also disclosed as well as uses for the above **zirconium** containing materials.

ST **sodium zirconium carbonate** prepn; **zirconium** basic carbonate prepn

IT Dialysis
(cartridge; methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate)

IT Adsorption
Centrifugation
(methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate)

IT Heavy metals
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(toxic, adsorption; methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate)

IT **Filtration**
(vacuum **filtration**; methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate)

IT 7664-41-7, Ammonia, **processes** 14127-61-8, Calcium(2+), **processes** 22537-22-0, Magnesium(2+), **processes**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(adsorption; methods for **preparation** of **sodium zirconium carbonate** and **zirconium** basic carbonate)

IT **497-19-8**, **Soda**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**ash**; methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate)

IT **1310-73-2**, **Caustic soda**, **processes**
7664-38-2, Phosphoric acid, **processes** 12164-98-6, **Zirconium** oxide hydrate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(methods for **preparation** of **sodium zirconium carbonate** and **zirconium** basic carbonate)

IT **15667-84-2P**, Basic **zirconium carbonate**
RL: PUR (Purification or recovery); PREP (Preparation)
(methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate)

IT 7699-43-6, **Zirconium** oxychloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(methods for preparation of **sodium zirconium**

carbonate and **zirconium** basic carbonate)
IT **13765-95-2P**, **Zirconium** phosphate 72517-32-9P, Carbonic acid, sodium **zirconium** salt
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**
(methods for preparation of **sodium zirconium carbonate** and **zirconium** basic carbonate)

L82 ANSWER 12 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:157693 CAPLUS
DN 136:201065
ED Entered STN: 01 Mar 2002
TI Lamellar compounds based on phosphates of **zirconium** and(or) titanium and their manufacture for reinforcing thermoplastics
IN Bougelot, Emmanuelle; Dupuis, Dominique; Robert, Gilles; Varlet, Joeel
PA Rhodianyl, Fr.
SO PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DT Patent
LA French
IC ICM C01B025-37
CC 37-6 (Plastics Manufacture and Processing)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002016264	A1	20020228	WO 2001-FR2653	20010823
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	FR 2813300	A1	20020301	FR 2000-10872	20000823
	FR 2813300	B1	20021025		
	AU 2001086002	A5	20020304	AU 2001-86002	20010823
	BR 2001013434	A	20030624	BR 2001-13434	20010823
	EP 1349807	A1	20031008	EP 2001-965341	20010823
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004506585	T2	20040304	JP 2002-521143	20010823
	US 2004033186	A1	20040219	US 2003-362586	20030929
PRAI	FR 2000-10872	A	20000823		
	WO 2001-FR2653	W	20010823		

OS MARPAT 136:201065
AB Lamellar compds., useful for reinforcing thermoplastics giving nanocomposites, are manufactured by (a) precipitation of a compound based on Zr and(or)
Ti phosphate starting with H3PO4 and compds. of Zr4+ and(or) Ti4+, crystallization
of the compound, and treatment of the crystallized compound in an organic or inorg.

liquid at pH 3-9. Preferable, the liquid is ARB [A, B = groups reactive with acid groups of Zr and(or) Ti phosphate, R = (substituted) C2-20 aliph, cycloaliph, or aromatic groups, optionally, containing heteroatoms], with the mol ratio between the A and B functions and the Zr and(or) Ti phosphate being 0.1-0.8. A typical filled plastic was manufactured by treatment of Zr(HPO4) crystals in a 70% aqueous hexamethylenediamine solution at pH 5, dilution with water to 15% solids, and polymerization of caprolactam in the presence of 2% (based on solids) resulting aqueous solution

ST **zirconium** phosphate lamellar reinforcing agent thermoplastic polymer; nanocomposite **zirconium** titanium phosphate filler; hexamethylenediamine treated **zirconium** hydrogen phosphate lamellar filler polycaprolactam; titanium phosphate lamellar reinforcing agent thermoplastic polymer

IT Polyamide fibers, properties
RL: PRP (Properties)
(6; lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

IT Abrasion-resistant materials
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastic fibers for abrasion-resistant products)

IT Paper
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastic fibers for felt pads for papermaking machines)

IT Fillers
Nanocomposites
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

IT Polyamides, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

IT Polyamides, uses
RL: POF (Polymer in formulation); USES (Uses)
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

IT Amines, processes
Amino acids, processes
Lactams
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(treating agent; lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

IT 7699-43-6, **Zirconium** oxychloride 13780-39-7, Titanium oxychloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(lamellar compound precursor; lamellar compds. based on phosphates of

zirconium and(or) titanium for reinforcing thermoplastics)

IT 13765-94-1P
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastic fibers for abrasion-resistant products)

IT **13772-29-7P**
RL: **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

IT 25038-54-4P, Polyamide 6, preparation 52016-02-1P, Caprolactam-hexamethylenediamine copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

IT 32131-17-2, Polyamide 66, uses
RL: POF (Polymer in formulation); USES (Uses)
(lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

IT 105-60-2, Caprolactam, processes 124-09-4, Hexamethylenediamine, processes **1310-73-2**, Sodium hydroxide, processes 1477-55-0, 1,3-Benzenedimethanamine 15520-10-2, 2-Methylpentamethylenediamine
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(treating agent; lamellar compds. based on phosphates of **zirconium** and(or) titanium for reinforcing thermoplastics)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

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(2) Alberti, G; ADVANCED MATERIALS 1996, V8(4), P291 CAPLUS
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(4) Anon; PATENT ABSTRACTS OF JAPAN 1986, V010(107), PC-341
(5) Anon; PATENT ABSTRACTS OF JAPAN 1994, V018(114), PC-1171
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(11) The Dow Chemical Company; GB 1282594 A 1972

L82 ANSWER 13 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:301588 CAPLUS
DN 136:314122
ED Entered STN: 23 Apr 2002
TI Catalyst for decomposition of engine exhaust gases with high efficiency of particulate capture and high regeneration and its manufacture
IN Taoka, Noriyuki; Ono, Kazushige
PA Ibiden Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B01J027-18
ICS B01D053-94; B01J037-02; F01N003-02; F01N003-10; F01N003-24; F01N003-28
CC 59-3 (Air Pollution and Industrial Hygiene)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002119860	A2	20020423	JP 2000-315555	20001016
PRAI	JP 2000-315555		20001016		

AB The catalyst is manufactured by the following steps: (1) heating a tetravalent metal acidic insol. salt-containing ceramic support at 1000-1500° to cover the support with Si oxide film as an optional step, (2) immersing the support in an Al- and rarer earth oxide-containing solution, (3) heating the support for drying, (4) calcining the support at 300-500° to cover the support with an amorphous Al2O3 film, (5) immersing the support in water at 100° and drying it, (6) firing the support at 500-1200° to cover the support with a rare earth oxide-containing Al2O3 thin film, and (6) dispersing active catalyst components on the uneven surface of the support. Exhaust gases passed through the catalyst shows less pressure loss and the catalyst shows high mech. strength and high rate of particulate capture to be useful for **purification** of exhaust gases from diesel engines.

ST diesel engine exhaust gas decompn catalyst; tetravalent metal salt support **purifn** catalyst exhaust gas; particulate capture exhaust gas **purifn** catalyst; **zirconium** phosphate support rare earth alumina coating

IT Rare earth oxides
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(alumina coating containing; manufacture of catalyst for decomposition of engine exhaust gases with high efficiency of particulate capture and high regeneration)

IT Exhaust gases (engine)
(diesel; manufacture of catalyst for decomposition of engine exhaust gases with high efficiency of particulate capture and high regeneration)

IT Catalyst supports
Exhaust gas catalytic converters
Exhaust particles (engine)
(manufacture of catalyst for decomposition of engine exhaust gases with high efficiency of particulate capture and high regeneration)

IT 15070-23-2, **Zirconium** arsenate 17017-57-1 29871-16-7, Titanium arsenate
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(catalyst support; manufacture of catalyst for decomposition of engine exhaust

gases with high efficiency of particulate capture and high regeneration)

IT 1344-28-1, Alumina, **processes**
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(ceria-containing, coating on support; **manufacture** of catalyst for decomposition of engine exhaust gases with high efficiency of particulate capture and high regeneration)

IT 1306-38-3, Ceria, processes
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(component of alumina coating on support; manufacture of catalyst for decomposition of engine exhaust gases with high efficiency of particulate capture and high regeneration)

IT **13765-95-2, Zirconium** phosphate
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(tetravalent, catalyst support; manufacture of catalyst for decomposition of engine exhaust gases with high efficiency of particulate capture and high regeneration)

L82 ANSWER 14 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:233044 CAPLUS
DN 136:251348
ED Entered STN: 27 Mar 2002
TI Stand with high resistance to reaction for supporting ceramic products during sintering
IN Moriyoshi, Yusuke; Otake, Toshikichi; Takayanagi, Michio
PA Ohtake Seramu K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B035-64
ICS C04B041-87
CC 57-2 (Ceramics)
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002087888	A2	20020327	JP 2000-282753	20000919
PRAI	JP 2000-282753		20000919		

AB A refractory stand is coated with a ceramic layer by melting a mixture of a ceramic **powder** and a binder **powder** (with a lower m.p.) using a gas burner and depositing the fused mixture The obtained stand is especially suitable for supporting condenser compacts that contains reactive substances.

ST stand ceramic sintering coating condenser

IT Coating **process**
(of stand for supporting ceramic **products** during sintering)

IT Ceramics
Holders

Sintering
(stand with high resistance to reaction for supporting ceramic products during sintering)

IT 1303-96-4, Borax 7631-86-9, Silica, uses **13765-95-2**, **Zirconium** phosphate
RL: MOA (Modifier or additive use); USES (Uses)
(binder; stand with high resistance to reaction for supporting ceramic products during sintering)

IT 1314-23-4, Zirconia, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coating on stand; stand with high resistance to reaction for supporting ceramic products during sintering)

IT 1344-28-1, Alumina, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; stand with high resistance to reaction for supporting ceramic products during sintering)

L82 ANSWER 15 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:841597 CAPLUS
DN 139:318709
ED Entered STN: 28 Oct 2003
TI Nanometer phosphate antibacterial composite and its **preparation process**
IN Wei, Liqiao; Xu, Bingshe; Lu, Yinglan
PA Taiyuan University of Science and Technology, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
IC ICM A01N059-26
CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 57, 58

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1385076	A	20021218	CN 2002-102186	20020121
PRAI	CN 2002-102186		20020121		

AB The title composite contains NH4H2PO4 0.5-5, AgNO3 0.2-6, ZnSO4 2-80, dispersing agent 0.5-2, and nano Zr3(PO4)4 100 part. The dispersing agent may be OX-N102 or HDP-3000. The composite is prepared by the following steps of (1) dissolving ZrOCl2, adding oxalic acid and H3PO4, adjusting its pH to 4-6 with 20% NaOH solution, precipitating, **filtering**, **washing**, putting the precipitate in an high-pressure autoclave, allowing to react at 100-300° for 2-5 h in the presence of deionized water and NaF as mineralizing agent with heating rate of 1.5 °/min to obtain a nano Zr phosphate **powder**; (2) dissolving AgNO3, ZnSO4 and NH4H2PO4 in deionized water to obtain solns.; (3) mixing the nanometer Zr phosphate with aqueous AgNO3 solution, heating to 70-95°, precipitating, adding ZnSO4 and NH4H2PO4 solution, heating to 80-100°, allowing to react for 2-6 h; (4) adding dispersing agent, stirring; (5) **filtering**, separating, **washing**, drying, grinding; and (6) calcining at

900-1200° for 3-12 h. The product can be used in ceramic, construction materials, etc.

ST **zirconium** phosphate bactericide ceramic construction material

IT Dispersing agents
(OX-N102 or HDP-3000; nanometer phosphate antibacterial composite used for ceramic and construction materials)

IT Antibacterial agents
Ceramics
Construction materials
Nanoparticles
(nanometer phosphate antibacterial composite used for ceramic and construction materials)

IT Particle size
(nanoscale; nanometer phosphate antibacterial composite used for ceramic and construction materials)

IT 7722-76-1, Ammonium phosphate (NH4H2PO4) 7733-02-0, Zinc sulfate (ZnSO4) 7761-88-8, Silver nitrate (AgNO3), biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(nanometer phosphate antibacterial composite used for ceramic and construction materials)

IT 144-62-7, Oxalic acid, biological studies 7664-38-2, Phosphoric acid, biological studies 7699-43-6, **Zirconium** chloride oxide (ZrCl2O)
RL: BUU (Biological use, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(nanometer phosphate antibacterial composite used for ceramic and construction materials)

IT **15438-04-7**, **Zirconium** phosphate (Zr3(PO4)4)
RL: BUU (Biological use, unclassified); FMU (Formation, unclassified); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(nanoparticles; nanometer phosphate antibacterial composite used for ceramic and construction materials)

L82 ANSWER 16 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:829993 CAPLUS
DN 139:318707
ED Entered STN: 23 Oct 2003
TI Nano bactericidal **powder** and its **preparation process**
IN Hu, Guoqing; Liu, Weiliang; Huang, Bin; Wang, Zhongfu; Wen, Junqiang; Cui, Xiaoping
PA Xingguo Nano-Technology Industrial Co., Ltd., Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
IC ICM A01N059-26
ICS A01N025-12
CC 5-2 (Agrochemical Bioregulators)
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	CN 1383723	A	20021211	CN 2002-111595	20020429
PRAI	CN 2002-111595		20020429		

AB The bactericidal **powder** contains nano **zirconium** phosphate 60-80, nano RE 10-35, chitosan 1-5, and Ag ion 2-6 part. The RE may be Y2O3 and/or La2O3 and/or CeO2 and/or Er2O3 and/or Sm2O3. The antibiotic **powder** is prepared by the following steps of mixing **zirconium** phosphate, RE and PVC to obtain a suspension solution; (2) dissolving AgNO3, adding NH3 liquor to form a complexing solution, adding chitosan to obtain a transparent solution; (3) mixing the suspension solution with the transparent solution, adding oxalic acid till its pH is 8-9 under stirring; and dewatering three times by S.T.O. dewatering agent, drying at 80-150°, treating at below 300°, and pulverizing. The nano **zirconium** phosphate and RE are prepared by dissolving ZrOCl2, NH4H2PO4 and water-soluble RE salt, resp., adding PEG as surfactant, allowing to coppt., **filtering**, dewatering, drying, calcining, and pulverizing.

ST bactericide nanoparticle **zirconium** phosphate rare earth

IT Nanoparticles
(nano bactericidal **powder** and its **preparation process**)

IT Rare earth metals, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(nano bactericidal **powder** and its **preparation process**)

IT Antibacterial agents
(nanoparticle; nano bactericidal **powder** and its **prepn**. **process**)

IT 144-62-7, Oxalic acid, biological studies 1306-38-3, Cerium dioxide, biological studies 1312-81-8, Lanthanum oxide 1314-36-9, Yttrium oxide (Y2O3), biological studies 1336-21-6, Ammonia water 1338-41-6, Span-60 7699-43-6, **Zirconium** oxychloride 7722-76-1, Ammonium dihydrogen phosphate 7761-88-8, Silver nitrate, biological studies 9002-86-2, PVC 9005-67-8, Tween-60 9012-76-4, Chitosan 10099-59-9, Lanthanum nitrate 10108-73-3, Cerium nitrate 10138-41-7, Erbium chloride 12060-58-1, Samarium oxide 12061-16-4, Erbium oxide **13765-95-2**, **Zirconium** phosphate
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(nano bactericidal **powder** and its **preparation process**)

L82 ANSWER 17 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:801710 CAPLUS
DN 137:281450
ED Entered STN: 23 Oct 2002
TI Manufacture of basic **zirconium** carbonate by solid phase process
IN Liu, Yunzhen
PA Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 4 pp.
CODEN: CNXXEV

DT Patent
LA Chinese
IC ICM C01G025-00
CC 49-5 (Industrial Inorganic Chemicals)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1328963	A	20020102	CN 2001-127301	20010807
PRAI CN 2001-127301		20010807		

AB The process comprises: mixing **zirconium** salt of strong acid and carbonate of alkali metals (or alkaline earth metals, or ammonium) under stirring; milling; and reacting to obtain basic **zirconium** carbonate and water soluble salt of alkali metals (or alkaline earth metals, or ammonium) salt; **washing** with water; concentrating **washing** water to obtain salts of alkali metals (or alkaline earth metals, or ammonium) salt; and centrifugal dewatering the residual resultant to obtain basic **zirconium** carbonate. **Zirconium** salt of strong acid contains basic salt, acidic salt, normal salt, double salt or **zirconium** oxychloride.
ST basic **zirconium** carbonate solid phase manuf
IT **15667-84-2P**, Basic **Zirconium** carbonate
RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of basic **zirconium** carbonate by solid phase process)
IT **497-19-8**, **Sodium carbonate**, reactions
1066-33-7, Ammonium hydrogen carbonate 7699-43-6, **Zirconium** oxychloride 14644-61-2, **Zirconium** sulfate
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture of basic **zirconium** carbonate by solid phase process)

L82 ANSWER 18 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:479711 CAPLUS
DN 138:97148
ED Entered STN: 26 Jun 2002
TI **Purification** of water-salt solutions by Ti(IV) and Zr(IV) phosphates
AU Lokshin, E. P.; Ivanenko, V. I.; Avsaragov, Kh.-M. B.; Mel'nik, N. A.; Vladimirova, V. V.; Kalinnikov, V. T.
CS I. V. Tananaev Institute of Chemistry and Technology of Rare-Earth Metals and Mineral Ores at the Kola Science Center of the Russian Academy of Sciences, Russia
SO Atomic Energy (New York, NY, United States)(Translation of Atomnaya Energiya) (2002), 92(2), 129-134
CODEN: AENYEZ; ISSN: 1063-4258
PB Kluwer Academic/Consultants Bureau
DT Journal
LA English
CC 71-13 (Nuclear Technology)
AB The sorption of γ- and β-emitting radionuclides from processed solns. of liquid wastes with a salt background, using **powdered** titanium and **zirconium** phosphates with the composition $TiO(OH)_{2(1-x)}(HPO_4)_x \cdot nH_2O$, where x = 0.23-1, and $Zr(HPO_4)_2 \cdot nH_2O$, was studied in view of propulsion nuclear power

system operational issues. The decontamination process was most efficient on titanyl hydrophosphate in the range pH = 4-6. Stage-wise sorption of radionuclides under static conditions and with flow of solution and sorbent is best. For decontamination of liquid wastes, an amorphous sorbent based on titanium (IV) hydroxide-phosphate matrix makes it possible to remove radionuclides and simultaneously petroleum **products** from the **processed** solns.

ST titanyl zirconyl hydrophosphate sorption gamma beta emitting radionuclide waste; radioactive waste liq radionuclide sorption titanium **zirconium** phosphate; nuclear auxiliary power system liq waste radionuclide sorption phosphate

IT Radionuclides, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PROC (Process)
(beta-emitters, radionuclides, beta-particle-emitting; sorption of γ- and β-emitting radionuclides from processed solns. of liquid wastes with a salt background using **powdered** titanium and **zirconium** phosphates)

IT Radionuclides, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PROC (Process)
(gamma-emitters, radionuclides, gamma-ray-emitting; sorption of γ- and β-emitting radionuclides from processed solns. of liquid wastes with a salt background using **powdered** titanium and **zirconium** phosphates)

IT Adsorption
(isotherm; sorption of γ- and β-emitting radionuclides from processed solns. of liquid wastes with a salt background using **powdered** titanium and **zirconium** phosphates)

IT Radioactive wastes
(liquid; sorption of γ- and β-emitting radionuclides from processed solns. of liquid wastes with a salt background using **powdered** titanium and **zirconium** phosphates)

IT Nuclear auxiliary power systems
Partition
Petroleum products
Radioactive decontamination
Sorption
(sorption of γ- and β-emitting radionuclides from processed solns. of liquid wastes with a salt background using **powdered** titanium and **zirconium** phosphates)

IT Seawater
(sorption of γ- and β-emitting radionuclides from processed solns. of liquid wastes with a salt background using **powdered** titanium and **zirconium** phosphates in relation to)

IT **13772-29-7**, **Zirconium** phosphate (Zr(HPO4)2)
482619-76-1, Titanium hydroxide oxide phosphate (Ti(OH)0-1.54O(HPO4)0.23-1)
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(sorption of γ- and β-emitting radionuclides from processed

solns. of liquid wastes with a salt background using **powdered** titanium and **zirconium** phosphates)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

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(2) Ahrland, S; Izobret Rubezh 1973, 8, P34
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L82 ANSWER 19 OF 41 CAPLUS

AN 2003:430148 CAPLUS
DN 139:167919
ED Entered STN: 05 Jun 2003

TI Studies on the processing techniques of compound antibacterial **powder** materials and production application

AU Liu, Weiliang; Li, Yansun; Li, Yijian; Yu, Duo
CS Jingdezhen Ceramic Institute, 333001, Peop. Rep. China

SO Zhongguo Taoci Gongye (2002), 9(6), 37-39
CODEN: ZTGOFB; ISSN: 1006-2874
PB Zhongguo Taoci Gongye Bianjibu
DT Journal
LA Chinese
CC 57-2 (Ceramics)
Section cross-reference(s): 10, 63, 78

AB A liquid phase method is adopted to prepare Ag-containing nanocryst. **zirconium** phosphate, TiO2 far-IR nanopowder, and superfine Ag-containing zeolite **powder.** Nano-compounded antibacterial **powder** materials are prepared by mixing in a proportion, which are added to ceramic. The result show that the mean particle size of compound antibacterial **powder** is >100 nm. It has character of wide antibacterial pedigree, more efficient, not poisonous to people and no stimulation. The phys. and chemical properties of antibacterial daily used ceramic after adding to compound antibacterial **powder** have attained claims for Chinese quality standard

ST antibacterial **powder** prepn property; **zirconium** phosphate silver composite antibacterial **powder** prepn property; titania antibacterial **powder** prepn property; zeolite silver

composite antibacterial **powder** prepn property

IT Nanocomposites
Nanoparticles
(antibacterial **powder**; liquid-phase synthesis and properties of antibacterial nanoparticles)

IT Antibacterial agents
(ceramic nanoparticles; liquid-phase synthesis and properties of antibacterial nanoparticles)

IT **Powders**
(ceramic, antibacterial agents; liquid-phase synthesis and properties of antibacterial nanoparticles)

IT Particle size
(liquid-phase synthesis and properties of antibacterial nanoparticles)

IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(liquid-phase synthesis and properties of antibacterial nanoparticles)

IT Ceramics
(**powders**, antibacterial agents; liquid-phase synthesis and properties of antibacterial nanoparticles)

IT Zeolites (synthetic), preparation
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(silver-doped, nanoparticles, antibacterial; liquid-phase synthesis and properties of antibacterial nanoparticles)

IT 7440-22-4P, Silver, preparation
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(composites with ceramics, antibacterial **powders**; liquid-phase synthesis and properties of antibacterial nanoparticles)

IT 60-00-4, Edta, uses 1338-41-6, Span 60 9002-89-5 9004-32-4, Cmc sodium salt 25322-68-3, Peg
RL: NUU (Other use, unclassified); USES (Uses)
(liquid-phase synthesis and properties of antibacterial nanoparticles)

IT 13463-67-7P, Titanium oxide (TiO2), preparation
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(nanoparticles, antibacterial; liquid-phase synthesis and properties of antibacterial nanoparticles)

IT 6484-52-2, Nitric acid ammonium salt, **processes** 7446-70-0, Aluminum chloride (AlCl3), **processes** 7664-41-7, Ammonia, **processes** 7699-43-6 7722-76-1 7761-88-8, Nitric acid silver(1+) salt, **processes** 7786-30-3, Magnesium chloride (MgCl2), **processes** 10026-04-7 10361-92-9, Yttrium chloride (YCl3) 13825-74-6, Titanium oxide sulfate tioso4 30463-53-7, Palladium chloride pdcl3
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; liquid-phase **synthesis** and properties of antibacterial nanoparticles)

IT **13765-95-2P, Zirconium** phosphate
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(silver-doped, nanoparticles, antibacterial; liquid-phase synthesis and properties of antibacterial nanoparticles)

L82 ANSWER 20 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:511483 CAPLUS
DN 137:53657
ED Entered STN: 10 Jul 2002
TI Preparation and use of composite adsorbent to remove 137Cs from liquid radioactive wastes
IN Zhang, Zhentao; Luo, Shanggeng; Fan, Xianhua
PA China Atomic Energy Science Academy, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
IC ICM G21F009-12
ICS B01J020-00
CC 71-11 (Nuclear Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1319849	A	20011031	CN 2001-109015	20010227
	CN 1129922	B	20031203		
PRAI	CN 2001-109015		20010227		

AB This composite adsorbent consists of inorg. ion absorbent 1-5 parts, a ferromagnetic substance (Fe3O4) 0.1-1.5 parts and acrylon 0.1-1.5 parts. One or two inorg. ion absorbents are selected from Cd, Cu and Ni ferrocyanides, ammonium phosphomolybdate, Zr phosphomolybdate and phosphotungstate, Ti phosphate, Zr phosphate, zeolite, clay, and Mn ore. The **preparation process** entails **preparing** a 4-18% acrylon solution with di-Me acetamide or N-Me pyrrolidone at 45-65° and stirring the 60-400 mesh inorg. ion absorbent and Fe3O4 with the acrylon solution The mixture is then added dropwise into deion H2O, it solidifies and then it is **filtered** and dried at 45-65°. The cake is broken up, **washed** and dried again to obtain the composite adsorbent.
ST cesium 137 radioactive liq waste inorg ion absorbent
IT Radioactive wastes
(liquid; preparation and use of composite adsorbent to remove 137Cs from liquid radioactive wastes)
IT Adsorbents
(preparation and use of composite adsorbent to remove 137Cs from liquid radioactive wastes)
IT Clays, uses
Manganese ores
Zeolites (synthetic), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(preparation and use of composite adsorbent to remove 137Cs from liquid radioactive wastes)
IT 127-19-5, Dimethyl acetamide 872-50-4, N-Methyl pyrrolidone, uses
RL: NUU (Other use, unclassified); USES (Uses)

(preparation and use of composite adsorbent to remove 137Cs from liquid radioactive wastes)

IT 10045-97-3, Cesium-137, **processes**
RL: REM (Removal or disposal); PROC (Process)
(**preparation** and use of composite adsorbent to remove 137Cs from liquid radioactive wastes)

IT 107-13-1, Acrylon, uses 1317-61-9, Iron oxide (Fe3O4), uses 12704-86-8, Ammonium phospho molybdate 13601-13-3, Copper ferrocyanide 13755-33-4, Cadmium ferrocyanide 13765-94-1 **13765-95-2**, **Zirconium** phosphate 14874-78-3, Nickel ferrocyanide 37271-40-2, **Zirconium** phosphate tungstate 173317-60-7, Molybdenum **zirconium** oxide phosphate (MoZrO4(PO4))
RL: TEM (Technical or engineered material use); USES (Uses)
(preparation and use of composite adsorbent to remove 137Cs from liquid radioactive wastes)

L82 ANSWER 21 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:737087 CAPLUS
DN 133:287955
ED Entered STN: 19 Oct 2000
TI Method for producing chemically bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents
IN Singh, Dileep; Wagh, Arun S.; Jeong, Seung-Young
PA United States Dept. of Energy, USA
SO U.S., 11 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM G21F009-16
NCL 588003000
CC 71-11 (Nuclear Technology)
Section cross-reference(s): 57
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6133498	A	20001017	US 1999-305820	19990505
PRAI	US 1999-305820		19990505		

AB Known phosphate ceramic formulations are improved and the ability to produce Fe-based phosphate ceramic systems is enabled by the addition of an oxidizing or reducing step during the acid-base reactions that form the phosphate ceramic products. The additives allow control of the rate of the acid-base reactions and concomitant **heat** generation. In an alternate embodiment, waste containing metal anions are stabilized in phosphate ceramic products by the addition of a reducing agent to the phosphate ceramic mixture The reduced metal ions are more stable and/or reactive with the phosphate ions, giving insol. metal species within the phosphate ceramic matrix, such that the resulting chemical bonded phosphate ceramic product has greater leach resistance.

ST bonded phosphate ceramic stabilizing radioactive waste reducing agent

IT Radioactive wastes
Reducing agents
(method for producing chemical bonded phosphate ceramics and for

stabilizing contaminants encapsulated therein utilizing reducing agents)

IT Phosphates, uses
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(method for producing chemical bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents)

IT Ceramics
(phosphate; method for producing chemical bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents)

IT 584-08-7, Potassium carbonate (K2CO3) 13907-47-6, Dichromate
RL: MOA (Modifier or additive use); USES (Uses)
(method for producing chemical bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents)

IT 1305-62-0, Calcium Hydroxide, uses 1305-78-8, Calcium Oxide, uses 1309-42-8, Magnesium Hydroxide 1309-48-4, Magnesium Oxide, uses 1314-23-4, **Zirconium** Oxide, uses 1332-37-2, Iron oxide, uses 1344-28-1, Aluminum Oxide, uses 7601-54-9 7758-87-4 7778-53-2 7778-77-0, Potassium phosphate (KH2PO4) 7779-90-0, Zinc phosphate 7784-30-7, Aluminum phosphate 10043-83-1 10361-65-6 11113-66-9, Iron hydroxide 12651-23-9, Titanium Hydroxide 13463-67-7, Titanium Oxide, uses 13598-26-0 13718-30-4, Magnesium potassium phosphate **13772-29-7** 13778-59-1, Lanthanum phosphate 13990-54-0, Yttrium phosphate 14475-63-9 21645-51-2, Aluminum Hydroxide, uses 25640-28-2 115694-77-4, Sodium sulfide (NaS)
RL: NUU (Other use, unclassified); USES (Uses)
(method for producing chemical bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents)

IT 10402-24-1P
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(method for producing chemical bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents)

IT 14133-76-7, Technetium-99, **processes**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(method for **producing** chemical bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents)

IT 1309-38-2, Magnetite (Fe3O4), reactions 1317-60-8, Hematite, reactions 7664-38-2, Phosphoric acid, reactions 7772-99-8, Tin chloride (SnCl2), reactions 11126-12-8, Iron sulfide
RL: RCT (Reactant); RACT (Reactant or reagent)
(method for producing chemical bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents)

IT 64-18-6, Formic acid, uses 302-01-2, Hydrazine, uses **497-19-8**, **Sodium carbonate** (Na2CO3), uses **1310-73-2**,

Sodium hydroxide (NaOH), uses 1312-73-8, Potassium sulfide (K2S) 1317-37-9, Iron sulfide (FeS) 7446-09-5, Sulfur oxide (SO2), uses 7631-90-5, Sodium sulfite (NaHSO3) 7664-93-9, Sulfuric acid, uses 7720-78-7 7772-98-7, Sodium thiosulfate 12177-67-2, Calcium hydroxide (CaOH) 16940-66-2, Sodium borohydride 20548-54-3, Calcium sulfide (CaS)
RL: NUU (Other use, unclassified); USES (Uses)
(reducing agent; method for producing chemical bonded phosphate ceramics and for stabilizing contaminants encapsulated therein utilizing reducing agents)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; US 124822
(2) Anon; US 5830815 CAPLUS
(3) Anon; US 5830815 CAPLUS
(4) Anon; US 5846894 CAPLUS
(5) Anon; US 617284
(6) Anon; US 9704132
(7) Dileep, S; Modified Phosphate Ceramics for Stabilization and Solidification of Salt Mixed Wastes, published in the Proceedings of Spectrum '98, International Conference on Decommissioning and Decontamination and on Nuclear and Hazardous Waste Management 1998
(8) Kartikey, P; Modified Phosphate Ceramics for Stabilization of Salt Mixed Wastes 1998
(9) Sapieszko; US 5939039 1999 CAPLUS
(10) Singh; US 5846894 1998 CAPLUS
(11) Wagh; US 5645518 1997 CAPLUS
(12) Wagh; US 5830815 1998 CAPLUS

L82 ANSWER 22 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:712669 CAPLUS
DN 133:270861
ED Entered STN: 10 Oct 2000
TI Deodorization agent composition and deodorant product
IN Hirukawa, Toshio; Takagi, Osamu; Yamada, Yoshinori
PA Toa Gosei Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A61L009-01
ICS A61L009-01
CC 59-6 (Air Pollution and Industrial Hygiene)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000279500	A2	20001010	JP 1999-94226	19990331
PRAI	JP 1999-94226		19990331		

AB This deodorization agent composition contains a deodorization agent consisting of an organic or inorg. support and a primary amino group-containing compound and a deodorization agent containing Al silicate. The composition may further contain

insol. or hardly soluble metal phosphates bearing Cu, Zn, and/or Mg and/or hydrated Zr oxide. The deodorant product is obtained by dispersing the composition in water or a solvent or depositing it on a substrate. The composition and deodorant product can simultaneously remove malodor of aldehydes and basic gases such as NH3, trimethylamine, etc.

ST deodorization agent compn aldehyde amine removal; primary amine aluminum silicate deodorant compn

IT Deodorants
(deodorant composition and deodorization product capable of removing amines and aldehydes)

IT Aldehydes, **processes**
Amines, **processes**
RL: REM (Removal or disposal); PROC (Process)
(deodorant composition and deodorization **product** capable of removing amines and aldehydes)

IT Air **purification**
(deodorization; deodorant composition and deodorization product capable of removing amines and aldehydes)

IT 7440-44-0, Carbon, uses
RL: MOA (Modifier or additive use); USES (Uses)
(activated, deodorant composition containing; deodorant composition and deodorization product capable of removing amines and aldehydes)

IT 1335-30-4, Aluminum silicate
RL: TEM (Technical or engineered material use); USES (Uses)
(amorphous chelates, KW 700 as; deodorant composition and deodorization product capable of removing amines and aldehydes)

IT 64-19-7, Acetic acid, **processes** 75-07-0, Acetaldehyde, **processes** 7664-41-7, Ammonia, **processes** 7783-06-4, Hydrogen sulfide, **processes**
RL: REM (Removal or disposal); PROC (Process)
(deodorant composition and deodorization **product** capable of removing amines and aldehydes)

IT 111-40-0, Diethylenetriamine
RL: TEM (Technical or engineered material use); USES (Uses)
(deodorant composition containing porous silica containing; deodorant composition and deodorization product capable of removing amines and aldehydes)

IT 1314-23-4D, **Zirconium** oxide, hydrated
RL: TEM (Technical or engineered material use); USES (Uses)
(deodorant composition containing; deodorant composition and deodorization product capable of removing amines and aldehydes)

IT **13765-95-2**, **Zirconium** phosphate
RL: TEM (Technical or engineered material use); USES (Uses)
(metal-bonded, deodorant composition containing; deodorant composition and deodorization product capable of removing amines and aldehydes)

IT 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(porous, diethylene triamine on; deodorant composition and deodorization product capable of removing amines and aldehydes)

IT 7439-96-5, Manganese, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**zirconium** phosphate bonded with, deodorant composition containing; deodorant composition and deodorization product capable of removing amines and aldehydes)

L82 ANSWER 23 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:534914 CAPLUS
DN 133:129059
ED Entered STN: 04 Aug 2000
TI Rare earth metal-based permanent magnet and **process** for **producing** it with a corrosion-inhibitor layer
IN Kohshi, Yoshimura; Takeshi, Nishiuchi; Fumiaki, Kikui
PA Sumitomo Special Metals Co., Ltd., Japan
SO Eur. Pat. Appl., 28 pp.
CODEN: EPXXDW
DT Patent
LA English
IC H01F041-02; H01F001-053; H01F001-057
CC 77-4 (Magnetic Phenomena)
Section cross-reference(s): 55, 56
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1024506	A1	20000802	EP 2000-101115	20000120
	R: DE, GB, SI, LT, LV, RO				
	JP 2001006909	A2	20010112	JP 2000-2223	20000111
	JP 3278647	B2	20020430		
	JP 2002134342	A2	20020510	JP 2001-242404	20000111
	JP 2002237407	A2	20020823	JP 2001-358260	20000111
	CN 1267892	A	20000927	CN 2000-106723	20000127
	US 6399150	B1	20020604	US 2000-492742	20000127
	US 2002144753	A1	20021010	US 2002-68970	20020211
PRAI	JP 1999-18426	A	19990127		
	JP 1999-115835	A	19990423		
	JP 1999-115836	A	19990423		
	JP 2000-2223	A	20000111		
	US 2000-492742	A3	20000127		

AB A rare earth metal-based permanent magnet has a film layer formed substantially of only a fine metal **powder** on a metal forming the surface of the magnet. The rare earth metal-based permanent magnet having the film layer on its surface is produced in the following manner: a rare earth metal-based permanent magnet and a fine metal **powder** forming material are placed into a treating vessel, where both of them are vibrated and/or agitated, whereby a film layer made of a fine metal **powder** produced from the fine metal **powder** producing material is formed on a metal forming the surface of the magnet. Thus, the formation of a corrosion-resistant film such as plated film can be achieved at a high thickness accuracy by forming an elec. conductive layer uniformly and firmly on the entire surface of the magnet without use of a 3rd component such as a resin and a coupling agent.

ST anticorrosion film metal **powder** rare earth magnet

IT Oxides (inorganic), processes
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(anticorrosion films; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT Magnets
(bonded; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT Sol-gel processing
(coating; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT Films
Films
(elec. conductive; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT Electric conductors
Electric conductors
(films; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT Rare earth alloys
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(magnets; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT **Powders**
(metal; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT Corrosion inhibitors
Electrodeposition
Electrodeposits
Magnets
Powder metallurgy
(rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT Coating process
(sol-gel; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT Boron alloy, nonbase
Iron alloy, base
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(magnets; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT 13765-94-1
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(Palcoat 3735 anticorrosion agent; rare earth metal-based permanent magnet and **process** for **producing** it with

corrosion-inhibitor layer)

IT **13765-95-2**, **Zirconium** phosphate
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(Palcoat 3756MA, 3756MB anticorrosion agent; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT 7440-02-0, Nickel, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(anticorrosion films and binding **powder**; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT 106804-25-5P, Titanium oxide (TiO0-2) 113671-38-8P, Silicon oxide (SiO0-2) 273751-95-4P, Aluminum silicon oxide (Al2SiO0-5)
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(anticorrosion films; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT 7429-90-5, Aluminum, processes 7439-89-6, Iron, processes 7439-92-1, Lead, processes 7440-22-4, Silver, processes 7440-31-5, Tin, processes 7440-43-9, Cadmium, processes 7440-47-3, Chromium, processes 7440-48-4, Cobalt, processes 7440-50-8, Copper, processes 7440-66-6, Zinc, processes 7440-74-6, Indium, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**powder** for binding anticorrosion layer; rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT 67-63-0, Isopropanol, processes 78-10-4 304-59-6, Rochelle salt, processes 681-84-5 **1310-73-2**, Sodium hydroxide, processes 1314-13-2, Zinc oxide, processes 3085-30-1, Aluminum butoxide 3333-67-3, Nickel carbonate 5593-70-4 7631-99-4, Sodium nitrate, processes 7705-08-0, Ferric chloride, processes 7718-54-9, Nickel chloride, processes 10043-35-3, Boric acid, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

IT 127638-77-1, Boron 6, cobalt 5, iron 76, neodymium 13 (atomic)
143271-85-6, Boron 6, cobalt 5, iron 77, neodymium 12 (atomic)
205866-75-7, Boron 7, iron 75, neodymium 17, praseodymium 1 (atomic)
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(rare earth metal-based permanent magnet and **process** for **producing** it with corrosion-inhibitor layer)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; PATENT ABSTRACTS OF JAPAN 1996, V1996(03)
(2) Anon; PATENT ABSTRACTS OF JAPAN 1997, V1997(12)

(3) Anon; PATENT ABSTRACTS OF JAPAN 1999, V1999(04)
(4) Daido Steel Co Ltd; JP 07302705 A 1995 CAPLUS
(5) Daidoo Denshi Kk; JP 09205013 A 1997 CAPLUS
(6) Daidoo Denshi Kk; JP 11003811 A 1999 CAPLUS
(7) Kanegafuchi Chemical Ind; EP 0502475 A 1992 CAPLUS
(8) Nishiuchi Takeshi; WO 9923675 A 1999

L82 ANSWER 24 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:565171 CAPLUS
DN 131:181110
ED Entered STN: 08 Sep 1999
TI Silver-coated inorganic microbicides and their manufacture
IN Ozanai, Hideyo; Nagata, Nagatoshi
PA Dowa Mining Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A01N059-16
ICS A01N025-08; A61L002-16
CC 5-2 (Agrochemical Bioregulators)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11240812	A2	19990907	JP 1998-57518	19980223
PRAI	JP 1998-57518		19980223		

AB The microbicides comprising Ag-coated inorg. particles, which elute ≤100 %ppm NO3- when stirred in in water (2 g/100 cm3) for 1 h, are manufactured by soaking inorg. particles in an aqueous AgNO3 solution, **washing** them with 3-10% aqueous NH3 solution to decrease NO3-, and then **washing** with H2O. The inorg. particles may substantially comprise ≥1 selected from zeolites, Ca phosphate, Zr phosphate, and Ca silicate. Discoloration of materials such as polymers to which the microbicides are added is prevented by decreasing NO3-. Zeolite particles (average particle size 3 μm) were soaked in an aqueous AgNO3 solution for 30 min , **washed** with 5% aqueous NH3 solution, **washed** with H2O, and then dried to give microbicide. Elution of NO3- from the microbicide were 29.0 ppm. Antibacterial effect of the microbicide against Escherichia coli and Staphylococcus aureus was also examined
ST silver coated inorg microbicide nitrate ion removal; zeolite silver coated microbicide nitrate ion removal
IT Antibacterial agents
Antimicrobial agents
(manufacture of Ag-coated inorg. microbicides by soaking inorg. particles with AgNO3 solution and **washing** NO3- with NH3 solution)
IT Zeolites (synthetic), biological studies
RL: BUU (Biological use, unclassified); TEM (Technical or engineered material use); BIOL (Biological study); USES (Uses)
(manufacture of Ag-coated inorg. microbicides by soaking inorg. particles with AgNO3 solution and **washing** NO3- with NH3 solution)
IT 7440-22-4, Silver, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); BUU (Biological use, unclassified); TEM (Technical or engineered material use); BIOL (Biological study); USES (Uses)
(manufacture of Ag-coated inorg. microbicides by soaking inorg. particles with AgNO3 solution and **washing** NO3- with NH3 solution)

IT 1344-95-2, Calcium silicate 10103-46-5, Calcium phosphate **13765-95-2**, **Zirconium** phosphate
RL: BUU (Biological use, unclassified); TEM (Technical or engineered material use); BIOL (Biological study); USES (Uses)
(manufacture of Ag-coated inorg. microbicides by soaking inorg. particles with AgNO3 solution and **washing** NO3- with NH3 solution)

IT 7664-41-7, Ammonia, uses
RL: NUU (Other use, unclassified); USES (Uses)
(manufacture of Ag-coated inorg. microbicides by soaking inorg. particles with AgNO3 solution and **washing** NO3- with NH3 solution)

IT 14797-55-8, Nitrate ion, **processes**
RL: REM (Removal or disposal); PROC (Process)
(**manufacture** of Ag-coated inorg. microbicides by soaking inorg. particles with AgNO3 solution and **washing** NO3- with NH3 solution)

L82 ANSWER 25 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:298297 CAPLUS
DN 130:359217
ED Entered STN: 14 May 1999
TI Preparation of hydroxyl-containing compounds and silver-loaded hydroxylation catalysts therefor
IN Miyoshi, Koichi; Koma, Hiroki
PA Toa Gosei Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B01J027-18
ICS C07B041-02; C07B061-00
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 67
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11123332	A2	19990511	JP 1997-304848	19971020
PRAI	JP 1997-304848		19971020		

AB The title catalysts are represented by the formula AgaAbM2(PO4)3.nH2O (A = alkali metal ion, alkaline earth metal ion, ammonium, or H ion; M = tetravalent metal; n = 0-6; a, b >0; a + mb = 1). Systems containing water, organic compds., and the catalysts are irradiated with UV or visible lights to give OH-containing compds. The catalysts show no aggregation in aqueous solns.

ST silver loaded phosphate hydroxylation catalyst; hydroxy compd prepn phosphate hydroxylation catalyst; **zirconium** phosphate silver loaded hydroxylation catalyst; hydroquinone hydroxylation silver loaded **zirconium** phosphate

IT Hydroxylation catalysts

Photolysis catalysts
(silver-loaded tetravalent metal phosphate as photochem. hydroxylation catalysts)

IT 7761-88-8, Silver nitrate, reactions
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(in preparation of silver-loaded tetravalent metal phosphate as photochem. hydroxylation catalysts)

IT **13765-95-2P**, **Zirconium** phosphate
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**; PROC (Process); RACT (Reactant or reagent)
(in preparation of silver-loaded tetravalent metal phosphate as photochem. hydroxylation catalysts)

IT **1310-73-2**, Sodium hydroxide, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(in preparation of silver-loaded tetravalent metal phosphate as photochem. hydroxylation catalysts)

IT 7722-76-1, Ammonium dihydrogen phosphate 14644-61-2, **Zirconium** sulfate
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of silver-loaded tetravalent metal phosphate as photochem. hydroxylation catalysts)

IT 224647-14-7P, Silver sodium **zirconium** phosphate (Ag0.54Na0.17Zr2(HPO4)0.3(PO4)2.7)
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(silver-loaded tetravalent metal phosphate as photochem. hydroxylation catalysts)

IT 123-31-9, Hydroquinone, reactions 55787-72-9, Dihydroxy-p-benzoquinone
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(silver-loaded tetravalent metal phosphate as photochem. hydroxylation catalysts)

L82 ANSWER 26 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:207746 CAPLUS
DN 126:201524
ED Entered STN: 31 Mar 1997
TI Gelation additive for hydraulic fracturing fluids
IN Dawson, Jeffrey C.; Le, Hoang Van
PA Bj Services Company, USA
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07F007-00
ICS E21B043-26
CC 51-2 (Fossil Fuels, Derivatives, and Related Products)
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	WO 9703991	A1	19970206	WO 1996-US11649	19960712
	W: AL, AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML				
	AU 9664914	A1	19970218	AU 1996-64914	19960712
	US 5773638	A	19980630	US 1997-858018	19970516
	US 5950729	A	19990914	US 1997-857574	19970516
PRAI	US 1995-502352		19950714		
	WO 1996-US11649		19960712		

AB A method of formulating an organo-**zirconium** compound is accomplished by combining in solution a dialdehyde such as glyoxal with **zirconium** carbonate. The reacting solution forms an organo-**zirconium** compound and carbon dioxide which is evolved as a gas from the solution This eliminates the need to **filter** or **wash** the organo-**zirconium** compound to remove undesirable byproducts. The organo-**zirconium** compound can be used as a crosslinking agent for crosslinking aqueous polymer gels used in fracturing fluids for fracturing subterranean formations of oil and gas wells.

ST polymer gel crosslinking agent fracturing fluid

IT Gels
(Polymer; gelation additive for hydraulic fracturing fluids)

IT Crosslinking agents
Geological structures (subsurface)
Petroleum recovery
(gelation additive for hydraulic fracturing fluids)

IT 1310-58-3, Potassium hydroxide, uses **1310-73-2**, Sodium hydroxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(gelation additive for hydraulic fracturing fluids)

IT 107-22-2, Glyoxal 7440-67-7D, **Zirconium**, organic compds., reactions **36577-48-7**, **Zirconium** carbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(gelation additive for hydraulic fracturing fluids)

L82 ANSWER 27 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:21045 CAPLUS
DN 126:49038
ED Entered STN: 15 Jan 1997
TI Carboxyalkyl substituted polygalactomannan fracturing fluids crosslinked with **zirconium** salt
IN Moorhouse, Ralph; Cottrell, Ian William
PA Rhone-Poulenc Inc., USA
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM E21B043-26
CC 51-2 (Fossil Fuels, Derivatives, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9634179	A1	19961031	WO 1996-US5631	19960422
	W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 5614475	A	19970325	US 1995-428263	19950425
	CA 2219212	AA	19961031	CA 1996-2219212	19960422
	AU 9655674	A1	19961118	AU 1996-55674	19960422
	AU 700377	B2	19990107		
	EP 824632	A1	19980225	EP 1996-913054	19960422
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	EP 1243750	A2	20020925	EP 2002-76822	19960422
	EP 1243750	A3	20021211		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	US 1995-428263	A	19950425		
	EP 1996-913054	A3	19960422		
	WO 1996-US5631	W	19960422		

AB A novel fracturing fluid composition comprising: (1) a carboxyalkyl derivatized polygalactomannan having a degree of substitution of between .apprx.0.01 and .apprx.3.0; (2) a **zirconium** salt crosslinking agent; (3) one or more thermal stabilizing agents; (4) one or more pH buffers; and (5) water; wherein said fluid is capable of maintaining at least 10% of its original cross-linked viscosity after three hours at a **temperature** greater to or equal to 250°F is provided.

ST fracturing fluid polygalactomannan **zirconium** crosslinking agent

IT 126-96-5, Sodium diacetate 144-55-8, **Sodium** bi **carbonate**, uses **497-19-8**, **Sodium carbonate**, uses **1310-73-2**, Sodium hydroxide, uses 7558-80-7, Monosodium phosphate
RL: MOA (Modifier or additive use); USES (Uses)
(buffer; carboxyalkyl substituted polygalactomannan fracturing fluids crosslinked with **zirconium** salt)

IT 124-38-9, Carbon dioxide, uses 1303-96-4, Borax 3926-62-3, Sodium monochloroacetate 7447-40-7, Potassium chloride, uses 9000-30-0, Guar gum 39346-76-4, Sodium carboxymethyl guar 51198-15-3, Carboxymethyl guar 51198-15-3D, Carboxymethyl guar, salts 51198-16-4, Carboxyethyl guar 51198-16-4D, Carboxyethyl guar, salts 184972-18-7 184972-18-7D, salts
RL: MOA (Modifier or additive use); USES (Uses)
(carboxyalkyl substituted polygalactomannan fracturing fluids crosslinked with **zirconium** salt)

IT 50-21-5D, Lactic acid, complexes with **zirconium** and diisoprylamine 102-71-6D, Triethanolamine, **zirconium** complexes 108-18-9D, Diisopropylamine, complexes with **zirconium** and

lactate 7440-67-7D, **Zirconium**, salt, uses 7440-67-7D, **Zirconium**, triethanolamine complexes, uses **15667-84-2**, **Zirconium** carbonate 17501-44-9, **Zirconium** acetylacetonate 22830-18-8, Citric acid, **Zirconium** salt 60676-90-6, **Zirconium** lactate
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinking agent; carboxyalkyl substituted polygalactomannan fracturing fluids crosslinked with **zirconium** salt)

IT 62-56-6, Thiourea, uses 7772-98-7, Sodium thiosulfate
RL: MOA (Modifier or additive use); USES (Uses)
(thermal stabilizing agent; carboxyalkyl substituted polygalactomannan fracturing fluids crosslinked with **zirconium** salt)

L82 ANSWER 28 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:416890 CAPLUS
DN 125:178114
ED Entered STN: 16 Jul 1996
TI A TGA investigation of hydrated monoclinic zirconia
AU Nawrocki, Jacek; Carr, Peter W.; Annen, Michael J.; Froelicher, Steve
CS Department of Chemistry, A. Mickiewicz University, Grunwaldzka 6, 60-780 Poznan, Pol.
SO Analytica Chimica Acta (1996), 327(3), 261-266
CODEN: ACACAM; ISSN: 0003-2670
PB Elsevier
DT Journal
LA English
CC 66-3 (Surface Chemistry and Colloids)
Section cross-reference(s): 57, 79
AB Thermogravimetric anal. (TGA) was used to monitor the surface hydroxyl and carbonate concns. on porous zirconia after various vapor- and liquid-phase treatments. After equilibration with humid N, each of the surface Zr atoms bears a single hydroxyl group and all surface O atoms are present as bridged hydroxyl groups. HCl and NaOH treatments further increase the surface hydroxyl group concentration In the presence of sufficient H2O, CO2 chemisorption is inhibited. Once adsorbed, however, surface carbonates and bicarbonates are not removed by HCl, NaOH, or NaF **washings.**
ST chromatog zirconia surface carbonate hydroxyl thermogravimetry
IT Chemisorbed substances
Chromatography, column and liquid
(thermogravimetric anal. study of zirconia surface carbonate and hydroxyl species and implications for use as chromatog. phase)
IT Hydroxyl group
RL: PRP (Properties)
(surface, thermogravimetric anal. study of zirconia surface carbonate and hydroxyl species and implications for use as chromatog. phase)
IT Desorption
(thermal, thermogravimetric anal. study of zirconia surface carbonate and hydroxyl species and implications for use as chromatog. phase)
IT **36577-48-7**, **Zirconium** carbonate
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(surface; thermogravimetric anal. study of zirconia surface carbonate

and hydroxyl species and implications for use as chromatog. phase)

IT **1310-73-2**, Sodium hydroxide, uses 7647-01-0, Hydrochloric acid, uses 7681-49-4, Sodium fluoride, uses
RL: NUU (Other use, unclassified); USES (Uses)
(thermogravimetric anal. study of zirconia surface carbonate and hydroxyl species and implications for use as chromatog. phase)

IT 124-38-9, Carbon dioxide, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(thermogravimetric anal. study of zirconia surface carbonate and hydroxyl species and implications for use as chromatog. phase)

IT 7732-18-5, Water, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(thermogravimetric anal. study of zirconia surface carbonate and hydroxyl species and implications for use as chromatog. phase)

IT 12164-98-6, Zirconia hydrate
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(thermogravimetric anal. study of zirconia surface carbonate and hydroxyl species and implications for use as chromatog. phase)

L82 ANSWER 29 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:545956 CAPLUS
DN 125:345982
ED Entered STN: 12 Sep 1996
TI Preparation and structure of complex orthophosphates of **zirconium** and alkali metals. I. Cesium **zirconium** and sodium **zirconium** phosphates
AU Orlova, A. I.; Pet'kov, V. I.; Egor'kova, O. V.
CS NII Khimii, Russia
SO Radiokhimiya (1996), 38(1), 15-21
CODEN: RADKAU; ISSN: 0033-8311
PB Nauka
DT Journal
LA Russian
CC 78-6 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
AB Cs Zr and Na Zr phosphates with various ratios between alkali metals and Zr were prepared MxZr2.25-0.25x(PO4)3 ($0 \leq x \leq 5$) were studied by x-ray phase anal., IR spectroscopy, DTA, TG, and DTG. The concentration limits of the existence of phosphate phases with the NaZr2(PO4)3 (NZP) structure were determined as $0 \leq x \leq 1$ for Cs and $0 \leq x \leq 5$ for Na. The dependence of the thermal stability on x was revealed. The effect of the preparation procedure on the crystal parameters of the phosphates CsZr2(PO4)3 and NaZr2(PO4)3 is discussed.
ST **zirconium** cesium sodium phosphate prepn structure; crystal structure **zirconium** cesium sodium phosphate
IT Crystal structure
(of cesium/sodium **zirconium** phosphates)
IT **1310-73-2**, Sodium hydroxide, reactions 1314-23-4, Zirconia, reactions 7664-38-2, Phosphoric acid, reactions 21351-79-1, Cesium

hydroxide
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of cesium/sodium **zirconium** phosphates)
IT **15438-04-7P**, **Zirconium** phosphate (Zr3(PO4)4)
19527-81-2P, Sodium **zirconium** phosphate (NaZr2(PO4)3)
19527-88-9P, Cesium **zirconium** phosphate (CsZr2(PO4)3)
28132-50-5P, Sodium **zirconium** phosphate (Na2Zr(PO4)2)
34370-46-2P, Cesium **zirconium** phosphate (Cs3Zr1.5(PO4)3)
84953-65-1P, Sodium **zirconium** phosphate (Na5Zr(PO4)3)
183896-31-3P, Sodium **zirconium** phosphate (Na0-5Zr1-2.25(PO4)3)
183896-32-4P, Cesium **zirconium** phosphate (Cs0-1Zr2-2.25(PO4)3)
RL: PRP (Properties); **SPN (Synthetic preparation)**; **PREP (Preparation)**
(preparation and crystal structure of)

L82 ANSWER 30 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:494520 CAPLUS
DN 122:220460
ED Entered STN: 19 Apr 1995
TI Manufacture of aluminum cans having excellent sliding property
IN Myazaki, Shunzo; Suzuki, Akihisa; Wada, Yukihiro; Hatsutori, Munehisa
PA Hokkai Can, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C23C022-00
ICS B05D003-10; B05D007-14; B21D051-18; B65D001-12
CC 56-11 (Nonferrous Metals and Alloys)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06330339	A2	19941129	JP 1993-122649	19930525
	JP 3301817	B2	20020715		
PRAI	JP 1993-122649		19930525		

AB Al sheets are punched to cup form, drawn to obtain cans, degreased, **washed**, treated with an aqueous Zr phosphate solution to form conversion coating and adhered with N,N-dipolyoxyalkylene-alkylaminesystem cationic surfactant. The Al cans have excellent sliding property.
ST aluminum can sliding improvement
IT Cans
(Manufacture of aluminum cans having **zirconium** phosphate conversion coating and cationic surfactant coating for sliding improvement)
IT Surfactants
(cationic, Manufacture of aluminum cans having **zirconium** phosphate conversion coating and cationic surfactant coating for sliding improvement)
IT 7429-90-5, Aluminum, **processes**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**Manufacture** of aluminum cans having **zirconium** phosphate

conversion coating and cationic surfactant coating for sliding improvement)

IT **13765-95-2**, **Zirconium** phosphate
RL: TEM (Technical or engineered material use); USES (Uses)
(Manufacture of aluminum cans having **zirconium** phosphate conversion coating and cationic surfactant coating for sliding improvement)

IT 36563-57-2
RL: TEM (Technical or engineered material use); USES (Uses)
(cationic surfactant; Manufacture of aluminum cans having **zirconium** phosphate conversion coating and cationic surfactant coating for sliding improvement)

L82 ANSWER 31 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:440049 CAPLUS
DN 121:40049
ED Entered STN: 23 Jul 1994
TI Grain-oriented electrical steel sheet having high magnetic flux density and ultra low core loss and process for producing the sheet
IN Tanaka, Osamu; Kuroki, Katsuro; Ishiba, Maremizu; Masui, Hiroaki; Haratani, Tsutomu; Nakamura, Yoshio; Honma, Hotaka; Mishima, Yoichi
PA Nippon Steel Corp., Japan
SO Eur. Pat. Appl., 30 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C21D008-12
CC 55-11 (Ferrous Metals and Alloys)
Section cross-reference(s): 76, 77
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 577124	A2	19940105	EP 1993-110517	19930701
	EP 577124	A3	19940921		
	R: DE, FR, GB, IT				
	JP 06017132	A2	19940125	JP 1992-175790	19920702
	JP 06049654	A2	19940222	JP 1992-206795	19920803
	JP 06065753	A2	19940308	JP 1992-220500	19920819
	JP 06136552	A2	19940517	JP 1992-284787	19921022
	JP 06145998	A2	19940527	JP 1992-302728	19921112
	JP 06188116	A2	19940708	JP 1992-340746	19921221
PRAI	JP 1992-175790		19920702		
	JP 1992-206795		19920803		
	JP 1992-220500		19920819		
	JP 1992-284787		19921022		
	JP 1992-302728		19921112		
	JP 1992-340746		19921221		

AB The grain-oriented elec. steel sheet containing 2.5-4.5% Si has a high magnetic flux d. and low core loss and is essentially free of an undesirable glass film weighing ≤0.6 g/m2 and consisting of forsterite and spinel composed of MgO, SiO2, and Al2O3, but having an insulating oxide coating ≤6 μm thick. The face tension imparted

to the sheet is 0.0-2.0 kg/mm2. The magnetic flux d. at a magnetizing force of 80-0 A/m is ≥1.88 T. For the final box annealing after hot rolling, primary recrystn. annealing, and decarburization annealing, an annealing separator comprising 100 MgO and 2-30 weight parts chloride, carbonate, nitrate, sulfate, and/or sulfide of Li, K, Bi, Na, Ba, Ca, Mg, Zn, Fe, Zr, Sr, Sn, and Al is used. The annealing is done in a N-H atmospheric containing ≥30% N at a **heating** rate of ≤20 °/h.
A seam is imparted at an angle of 45-90° to the rolling direction of the steel sheet.

ST silicon steel metalworking magnetic core

IT Metalworking
(of grain-oriented silicon steel sheet, for transformer cores)

IT Transformers
(cores, grain-oriented silicon steel sheet for, production of)

IT Magnetic cores
(transformer, grain-oriented silicon steel sheet for, production of)

IT 584-08-7, Potassium carbonate 1302-81-4, Aluminum sulfide 1312-73-8, Potassium sulfide 1313-82-2, Sodium sulfide, properties 1314-96-1, Strontium sulfide 1314-98-3, Zinc sulfide, properties 1344-13-4, Tin chloride 1345-07-9, Bismuth sulfide 1633-05-2, Strontium carbonate 3486-35-9, Zinc carbonate 7446-70-0, Aluminum chloride, properties 7447-40-7, Potassium chloride, properties 10022-31-8, Barium nitrate 10026-11-6, **Zirconium** chloride 10028-22-5, Ferric sulfate 10031-62-6, Tin sulfate 10042-76-9, Strontium nitrate 10043-01-3, Aluminum sulfate 10043-52-4, Calcium chloride, properties 10124-37-5, Calcium nitrate 10361-37-2, Barium chloride, properties 10361-44-1, Bismuth nitrate 10377-60-3, Magnesium nitrate 10421-48-4, Ferric nitrate 10476-85-4, Strontium chloride 12032-36-9, Magnesium sulfide 12063-27-3, Ferric sulfide 12738-87-3, Tin sulfide 13473-90-0, Aluminum nitrate 13746-89-9, **Zirconium** nitrate 14455-29-9, Aluminum carbonate 14644-61-2, **Zirconium** sulfate 16508-95-5, Bismuth carbonate 20548-54-3, Calcium sulfide 21109-95-5, Barium sulfide 26273-46-1, Ferric carbonate **36577-48-7** 37244-09-0, **Zirconium** sulfide 41480-79-9, Tin nitrate 150815-34-2 155753-39-2 155753-40-5
RL: USES (Uses)
(annealing separator containing magnesium oxide and, for production of grain-oriented silicon steel sheet)

IT 471-34-1, Calcium carbonate, properties **497-19-8**, **Sodium carbonate**, properties 513-77-9, Barium carbonate 546-93-0, Magnesium carbonate 7487-88-9, Magnesium sulfate, properties 7631-99-4, Sodium nitrate, properties 7646-85-7, Zinc chloride (ZnCl2), properties 7647-14-5, Sodium chloride, properties 7705-08-0, Ferric chloride, properties 7727-43-7, Barium sulfate 7733-02-0, Zinc sulfate 7757-79-1, Nitric acid potassium salt, properties 7757-82-6, Sodium sulfate, properties 7759-02-6, Strontium sulfate 7778-18-9, Calcium sulfate 7778-80-5, Potassium sulfate, properties 7779-88-6, Zinc nitrate 7786-30-3, Magnesium chloride, properties 7787-60-2, Bismuth chloride 7787-68-0, Bismuth sulfate
RL: PRP (Properties)
(annealing separator containing magnesium oxide and, for production of grain-oriented silicon steel sheet)

IT 554-13-2, Lithium carbonate 7790-69-4, Lithium nitrate 10377-48-7, Lithium sulfate 12136-58-2, Lithium sulfide
RL: USES (Uses)
(annealing separator containing, for production of grain-oriented silicon steel sheet)
IT 1309-48-4, Magnesium oxide, properties 7447-41-8, Lithium chloride, properties
RL: PRP (Properties)
(annealing separator containing, for production of grain-oriented silicon steel sheet)
IT 85424-58-4P 153409-10-0P, preparation 155753-33-6P 155753-34-7P 155753-35-8P, preparation 155753-36-9P 155753-37-0P 155753-38-1P, preparation 155978-50-0P
RL: PREP (Preparation)
(production of grain-oriented sheet of, for transformer cores)

L82 ANSWER 32 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:582625 CAPLUS
DN 115:182625
ED Entered STN: 01 Nov 1991
TI **Process** for **producing** dipentaerythritol
IN Kambara, Yoshihiko; Idemoto, Toru; Ono, Yasuko; Tona, Chika
PA Mitsui Toatsu Chemicals, Inc., Japan
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C07C043-13
ICS C07C041-09; C07C041-40; B01J027-16; B01J027-18; B01J027-188; C07B061-00
CC 23-7 (Aliphatic Compounds)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9110633	A1	19910725	WO 1991-JP4	19910108
	W: KR, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	JP 03261736	A2	19911121	JP 1990-254130	19900926
	JP 04145040	A2	19920519	JP 1990-268461	19901008
	JP 2863296	B2	19990303		
	EP 462283	A1	19911227	EP 1991-901530	19910108
	EP 462283	B1	19950809		
	R: DE, GB, SE				
	US 5254749	A	19931019	US 1991-741518	19910809
PRAI	JP 1990-953		19900109		
	JP 1990-254130		19900926		
	JP 1990-268461		19901008		
	WO 1991-JP4		19910108		

AB Dipentaerythritol (I), useful as an intermediate for lubricants or thermal stabilizers for polyester, polyurethane, and PVC, is prepared by

condensation of pentaerythritol (II) in the presence of an acid catalyst preferably in a polar solvent, e.g., DMF, DMSO, (BuO)3PO, sulfolane, and 1,3-dimethyl-2-imidazolidinone. The condensation reaction is terminated by lowering the temperature of the reaction mixture to ≤195° before the conversion of II exceeds 25% in order to prevent the rise of the concentration of tripentaerythritol (III) and at the same time crystallizing part of II to thereby increase the concentration of I. Thus, 500 g II containing I 3.8, II 91.4, bispentaerythritol monoformal (IV) 4.0, and III 0.2% was heated to 240° to melt and thereto 1.5 g 85% H3PO4 was added and the mixture was allowed to react for 1 h at 240° to give a reaction mixture containing I 11.9, II 79.7, III 1.6, and others 6.2% with 16.0% conversion of II, with no detectable IV. The reaction mixture was cooled to 183° to crystallize a part of unreacted II and **filtered** to give 154 g product containing I 19.6, II 64.6, III 3.0, and others 11.7% which was crystallized twice from H2O to give 27.8 g crystalline I containing I 84.2, II 0.7, and III 15.0%.

ST pentaerythritol dehydrative condensation; dipentaerythritol

IT 7664-38-2, Phosphoric acid, uses and miscellaneous 7784-30-7, Aluminum phosphate 10381-36-9, Nickel phosphate 13765-94-1 **13765-95-2**, **Zirconium** phosphate 16453-74-0
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for condensation of pentaerythritol to dipentaerythritol)

IT 149-32-6, Erythritol
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, dipentaerythritol from)

IT 126-58-9P, Dipentaerythritol
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by condensation of pentaerythritol)

IT 67-68-5, Dimethyl sulfoxide, uses and miscellaneous 68-12-2, DMF, uses and miscellaneous 80-73-9, 1,3-Dimethyl-2-imidazolidinone 126-33-0, Sulfolane 126-73-8, Tributyl phosphate, uses and miscellaneous 7732-18-5, Water, uses and miscellaneous
RL: USES (Uses)
(solvent, for condensation of pentaerythritol)

L82 ANSWER 33 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:452868 CAPLUS
DN 115:52868
ED Entered STN: 10 Aug 1991
TI Manufacture and use of layered, crystalline hydrogen-phosphate compounds
IN Ueda, Shiunkichi; Suita, Tomoe; Murakami, Masahiko; Tsuhako, Mitsutomo
PA Tayca Corp., Japan
SO Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C01B025-37
CC 49-5 (Industrial Inorganic Chemicals)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 426048	A2	19910508	EP 1990-120630	19901027
	EP 426048	A3	19920408		
	EP 426048	B1	19940323		
	R: DE, FR, GB				
	JP 03150214	A2	19910626	JP 1989-286684	19891102
	JP 3004291	B2	20000131		
	JP 04022898	A2	19920127	JP 1990-127814	19900516
	US 5085845	A	19920204	US 1990-603051	19901025
PRAI	JP 1989-286684	A	19891102		
	JP 1990-127814	A	19900516		

AB The process comprises reacting a tetravalent metal compound with H3PO4, or its salts, at 80-300° in the presence of steam. The H3PO4 source/tetravalent metal compound molar ratio expressed as P2O5:MO2 (M = tetravalent metal) is (0.5-2.5):1. Crystalline layered Ce(HPO4)2.2H2O, **prepared** by this **process**, has high selectivity and efficiency in the adsorption of Cs ions, e.g., from radioactive material-containing waste liqs.

ST layered cryst cerium hydrogen phosphate; cesium ion adsorption cerium hydrogen phosphate; tetravalent metal hydrogen phosphate; phosphoric acid tetravalent metal

IT 7440-46-2, Cesium, properties
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(adsorption of, crystalline layered hydrogen phosphate compound manufacture for)

IT 19114-77-3P
RL: IMF (Industrial manufacture); PREP (Preparation)
(crystalline, manufacture of layered, by reacting ceria with phosphoric acid, for cesium ion adsorption)

IT 14532-00-4P
RL: IMF (Industrial manufacture); PREP (Preparation)
(crystalline, manufacture of layered, by reacting tin tetrachloride with sodium hydrogen phosphate)

IT 13939-25-8
RL: USES (Uses)
(hydrogen phosphate compds. containing **purified**, for cesium ion adsorption)

IT 13772-30-0P
RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of layered, by reacting titanium hydroxide with phosphoric acid, for cesium ion adsorption)

IT **13772-29-7P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of layered, by reacting **zirconium** compds. with phosphoric acid, for cesium ion adsorption)

IT 1306-38-3, Ceria, reactions 12014-56-1, Cerium hydroxide [Ce(OH)4]
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with phosphoric acid, for layered cerium hydrogen phosphate for cesium ion adsorption)

IT 20338-08-3, Titanium hydroxide [Ti(OH)4]
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with phosphoric acid, for layered titanium hydrogen phosphate for cesium ion adsorption)
IT 7699-43-6, **Zirconium** oxychloride (ZrOCl2) 14475-63-9, **Zirconium** hydroxide [Zr(OH)4]
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with phosphoric acid, for layered **zirconium** hydrogen phosphate for cesium ion adsorption)
IT 7646-78-8, Tin tetrachloride, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with sodium hydrogen phosphate, for layered tin hydrogen phosphate)
IT 7664-38-2, Phosphoric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with tetravalent metal compds., for layered hydrogen phosphates. for cesium ion adsorption)
IT 7558-79-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with tin tetrachloride, for layered tin hydrogen phosphate)

L82 ANSWER 34 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:177291 CAPLUS
DN 114:177291
ED Entered STN: 03 May 1991
TI Stability of **zirconium** cobalt hydrides (ZrCoH3 and Zr2CoH5) and titanium cobalt hydride (Ti2CoH3) in corrosive media
AU Zaletilo, L. S.; Lavrenko, V. A.; Ratushnaya, V. Zh.
CS Inst. Probl. Materialoved., Kiev, USSR
SO Khimicheskaya Tekhnologiya (Kiev) (1990), (6), 24-7
CODEN: KHMTA6; ISSN: 0368-556X
DT Journal
LA Russian
CC 78-9 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
AB The stability of ZrCoH3 (I), Zr2CoH5 (II), and Ti2CoH3 (III) was studied in corrosive media: H2SO4, HCl, H2F2, H3PO4, NHO3, NH4OH, NaOH, and H2O. I and II are stable in HNO3 and HCl; II is stable in NaOH. In all other cases partial or total decomposition is observed I, II, and III were prepared by
heating the corresponding intermetallic in H2. I is orthorhombic, II is tetragonal, and III is cubic; lattice parameters are given.
ST crystal structure cobalt titanium **zirconium** hydride; acid reaction cobalt titanium **zirconium** hydride; hydroxide reaction cobalt titanium **zirconium** hydride; **zirconium** cobalt hydride stability prepn; titanium cobalt hydride stability prepn; stability cobalt ternary hydride acid base
IT Crystal structure
(of cobalt titanium hydride and cobalt **zirconium** hydride)
IT Reactivity
(of cobalt titanium hydride and cobalt **zirconium** hydrides

with acids and bases)

IT Acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of, with cobalt titanium hydride and cobalt **zirconium** hydrides)

IT 21041-93-0P, Cobalt dihydroxide
RL: PREP (Preparation)
(formation from reaction of cobalt **zirconium** hydrides in sodium hydroxide or water and oxidation of)

IT 12026-28-7P, Titanium hydroxide oxide (Ti(OH)2O)
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, from cobalt titanium hydride in nitric acid)

IT 14695-95-5P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, from cobalt **zirconium** hydrides and ammonium hydroxide)

IT 10124-43-3P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in reaction of cobalt titanium hydride and cobalt **zirconium** hydride in sulfuric acid)

IT **13765-95-2P**, **Zirconium** phosphate
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in reaction of cobalt **zirconium** hydrides in phosphoric acid)

IT 14644-61-2P, **Zirconium** sulfate
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in reaction of cobalt **zirconium** hydrides in sulfuric acid)

IT 1307-86-4P, Cobalt trihydroxide
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in reaction of cobalt **zirconium** hydrides with sodium hydroxide)

IT 53169-29-2P, Cobalt **zirconium** hydride (CoZrH3) 133174-56-8P, Cobalt titanium hydride (CoTi2H3) 133174-57-9P, Cobalt **zirconium** hydride (CoZr2H5)
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure and stability of, in acids and bases)

IT **1310-73-2**, Sodium hydroxide, reactions 1336-21-6, Ammonium hydroxide 7647-01-0, Hydrochloric acid, reactions 7664-38-2, Phosphoric acid, reactions 7664-39-3, Hydrogen fluoride, reactions 7664-93-9, Sulfuric acid, reactions 7697-37-2, Nitric acid, reactions 7732-18-5, Water, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with cobalt titanium hydride and cobalt **zirconium** hydrides)

IT 1333-74-0, Hydrogen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with cobalt-titanium and cobalt-**zirconium** intermetallics)

IT 12134-00-8 12187-26-7, CoZr 12187-27-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrogen)

L82 ANSWER 35 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1990:61968 CAPLUS
DN 112:61968
ED Entered STN: 17 Feb 1990
TI Catalyst for purification of exhaust gas and **process** for **production** thereof
IN Funabiki, Masaki; Kayano, Kunihide; Yamada, Teiji
PA Engelhard Corp., USA
SO Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM B01J023-58
ICS B01D053-36
CC 59-3 (Air Pollution and Industrial Hygiene)
Section cross-reference(s): 51, 67
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 329302	A2	19890823	EP 1989-300970	19890201
	EP 329302	A3	19900509		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 01210032	A2	19890823	JP 1988-34060	19880218
	JP 05043415	B4	19930701		
	AU 8929747	A1	19890824	AU 1989-29747	19890208
	AU 615721	B2	19911010		
	FI 8900778	A	19890819	FI 1989-778	19890217
	BR 8900700	A	19891017	BR 1989-700	19890217
	US 5202300	A	19930413	US 1990-602889	19901023
PRAI	JP 1988-34060		19880218		
	US 1989-302505		19890126		

AB The three-way catalyst has a monolithic support such as cordierite and contains Pd, Rh, γ-alumina, a Ce compound, a Sr compound, and a Zr compound as catalytic components. Suitable compds. include SrCO3, Sr(OH)2, SrO, **ZrCO3**, and ZrO.
ST exhaust gas three way catalyst
IT Exhaust gases
(three way catalyst for treatment of)
IT 630-08-0, Carbon monoxide, uses and miscellaneous 11104-93-1, Nitrogen oxide, uses and miscellaneous
RL: REM (Removal or disposal); PROC (Process)
(removal of, from exhaust gases, three-way catalyst for)
IT 1306-38-3, Cerium oxide, uses and miscellaneous 1314-11-0, Strontium oxide, uses and miscellaneous 1314-23-4, **Zirconium** oxide, uses and miscellaneous 1344-28-1, Alumina, uses and miscellaneous 1633-05-2, Strontium carbonate 7440-05-3, Palladium, uses and miscellaneous 7440-16-6, Rhodium, uses and miscellaneous 7440-24-6D, Strontium, derivs. 7440-45-1D, Cerium, derivs. 7440-67-7D, **Zirconium**, derivs. 18480-07-4, Strontium hydroxide 36577-48-7, **Zirconium** carbonate
RL: CAT (Catalyst use); USES (Uses)

(three way exhaust catalyst containing)
IT 1302-88-1, Cordierite
RL: OCCU (Occurrence)
(three way-catalyst support, for exhaust gas treatment)

L82 ANSWER 36 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1990:26208 CAPLUS
DN 112:26208
ED Entered STN: 21 Jan 1990
TI Kinetic characteristics of the ion-exchange **process** on **zirconium** phosphate **prepared** by the sol-gel-method
AU Perekhozheva, T. N.; Sharygin, L. M.; Albantova, G. P.
CS USSR
SO Izvestiya Akademii Nauk SSSR, Neorganicheskie Materialy (1989), 25(9), 1532-6
CODEN: IVNMAW; ISSN: 0002-337X
DT Journal
LA Russian
CC 66-4 (Surface Chemistry and Colloids)
AB Internal diffusion coeffs. were determined for a series of cations in Zr phosphates of different **moisture** content. The structures and ion exchange characteristics of these samples are compared. The nature of ion retarding in sorbent pores is discussed. The solution pH effects on the internal diffusion mobility of hydrolyzable and non-hydrolyzable ions were also examined
ST cation exchange diffusion **zirconium** phosphate
IT Diffusion
(of cations, in **zirconium** phosphates)
IT Cation exchange
(of divalent cations, on **zirconium** phosphates)
IT 7439-95-4, Magnesium, properties 7440-02-0, Nickel, properties 7440-48-4, Cobalt, properties 7440-50-8, Copper, properties 7440-66-6, Zinc, properties 7440-70-2, Calcium, properties
RL: PRP (Properties)
(cation exchange of, on **zirconium** phosphates, internal diffusion in relation to)
IT **13765-95-2**, **Zirconium** phosphate
RL: PRP (Properties)
(cation exchange on, of divalent cations, internal diffusion in relation to)

L82 ANSWER 37 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1988:457035 CAPLUS
DN 109:57035
ED Entered STN: 19 Aug 1988
TI **Process** and catalysts for **manufacture** of malonaldehyde derivatives
IN Hoelderich, Wolfgang; Goetz, Norbert; Hupfer, Leopold
PA BASF A.-G., Fed. Rep. Ger.
SO Ger. Offen., 8 pp.
CODEN: GWXXBX
DT Patent

LA German
IC ICM C07C047-277
ICS C07C045-51; B01J029-04; B01J027-16
CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 23, 67
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3629119	A1	19880310	DE 1986-3629119	19860827
	US 4812593	A	19890314	US 1987-82127	19870806
	EP 257557	A2	19880302	EP 1987-112061	19870820
	EP 257557	A3	19890419		
	EP 257557	B1	19911204		
	R: BE, CH, DE, FR, GB, LI, NL				
PRAI	DE 1986-3629119		19860827		
	DE 1987-3701113		19870116		

AB R1O(R2)C:C(R3)CHO (R1 = C1-6 alkyl; R2, R3 = H, C1-6 alkyl) are prepared by contacting (R1O)2R2CCHR3C(OR1)2H over a zeolite and/or phosphate and/or H3PO4-containing carrier material catalysts. A pentasil-type aluminosilicate zeolite was prepared by mixing highly dispersed SiO2 65, Al2(SO4)3.18H2O 20.3, and 50% aqueous 1, 6-hexanediamine solution 1000 g at 150° in an autoclave, **filtering** the reaction product, **washing**, and drying for 24 h at 110°, and calcining for 24 h at 500°, producing a catalyst having SiO2 content 91.6 weight%, and Al2O3 content 4.6 weight%. A H2O-saturated (.apprx.4 weight%) tetramethoxypropane solution was passed over this catalyst at 300° and weight hourly space velocity 2 h-1, producing tetramethoxypropane conversion 57.8%, with 98.3% selectivity for 3-methoxyacrolein.

ST malonaldehyde deriv manuf; zeolite catalyst malonaldehyde deriv manuf; tetramethoxypropane conversion methoxyacrolein manuf

IT Aluminosilicates, uses and miscellaneous
Borosilicates
Zeolites, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for manufacture of malonaldehyde derivs. from tetraalkoxypropanes)

IT 1335-30-4
RL: USES (Uses)
(aluminosilicates, catalysts, for manufacture of malonaldehyde derivs. from tetraalkoxypropanes)

IT 7439-89-6, Iron, uses and miscellaneous 7440-02-0, Nickel, uses and miscellaneous 7440-05-3, Palladium, uses and miscellaneous 7440-45-1, Cerium, uses and miscellaneous 7440-46-2, Cesium, uses and miscellaneous 7440-47-3, Chromium, uses and miscellaneous 7440-48-4, Cobalt, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing zeolites, for manufacture of malonaldehyde derivs. from tetraalkoxypropanes)

IT 7664-38-2, Phosphoric acid, uses and miscellaneous 7723-14-0, Phosphorus, uses and miscellaneous 10402-24-1, Iron phosphate

(unspecified) 13308-51-5, Boron phosphate (unspecified)
13765-95-2, **Zirconium** phosphate (unspecified)
14414-90-5, Strontium phosphate (unspecified) 98499-64-0, Aluminum phosphate (unspecified)
RL: CAT (Catalyst use); USES (Uses)
(catalysts, impregnated on carrier materials, for manufacture of malonaldehyde derivs. from tetraalkoxypropanes)

IT 122-31-6, 1,1,3,3-Tetraethoxypropane
RL: PROC (Process)
(conversion of, into ethoxypropenal, catalysts for)

IT 102-52-3, 1,1,3,3-Tetramethoxypropane
RL: PROC (Process)
(conversion of, to methoxyacrolein, catalysts for)

IT 19060-08-3P
RL: PREP (Preparation)
(manufacture of, from tetraethoxypropane, catalysts for)

IT 4652-35-1P, 3-Methoxyacrolein
RL: PREP (Preparation)
(manufacture of, from tetramethoxypropane, catalysts for)

IT 1335-30-4
RL: USES (Uses)
(zeolites, catalysts, for manufacture of malonaldehyde derivs. from tetraalkoxypropanes)

L82 ANSWER 38 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1984:24036 CAPLUS
DN 100:24036
ED Entered STN: 12 May 1984
TI Ion exchange inorganic films made up of layered structure insoluble acid salts of tetravalent metals and/or their derivatives and **process** for the **preparation** of the same
IN Alberti, Giulio; Constantino, Umberto
PA Consiglio Nazionale delle Ricerche, Italy
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA English
IC B01J039-08; B01J039-12; B01J047-12; C01G028-02; C01B025-16
CC 49-5 (Industrial Inorganic Chemicals)
Section cross-reference(s): 48

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 94919	A2	19831123	EP 1983-830094	19830512
	EP 94919	A3	19840725		
	EP 94919	B1	19861210		
	R: BE, DE, FR, GB, NL				
	JP 59000337	A2	19840105	JP 1983-85666	19830516
	JP 04068982	B4	19921104		
	US 4629656	A	19861216	US 1985-733407	19850513
PRAI	IT 1982-48437		19820517		
	US 1983-485342		19830415		

AB The ion exchange inorg. film is made up of insol. acid salts of tetravalent metals corresponding to the general formula [M(XO4)2]H2.nH2O, where M is a tetravalent metal such as Zr, Ti, Ce, Sn; X is a pentavalent element such as P or As; and n is 1 or 2, which salts show α-type or γ-type layered structures. Also described is a **process** for the **preparation** of the film of a given thickness on the surface of a **filter** surface.

ST ion exchange inorg film; **zirconium** phosphate ion exchange film; titanium phosphate ion exchange film

IT Films
(ion exchange, of tetravalent metal salts, preparation of)

IT Ion exchange
(tetravalent metal salt films for, preparation of)

IT **13772-29-7P** 13772-30-0P 52789-64-7P
RL: PREP (Preparation)
(ion exchange film, preparation of)

L82 ANSWER 39 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1981:552282 CAPLUS
DN 95:152282
ED Entered STN: 12 May 1984
TI Modified condensation synthetic resins
IN Csonka, Lajos; Filipszki, Janos; Matura, Mihaly
PA Budalakk Festek es Mugyantagyar, Hung.
SO Hung. Teljes, 23 pp.
CODEN: HUXXBU
DT Patent
LA Hungarian
IC C08G063-22
CC 42-9 (Coatings, Inks, and Related Products)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	HU 19792	O	19810428	HU 1979-BU922	19790319
	HU 177571	P	19811128		
PRAI	HU 1979-BU922		19790319		

AB Title polyester resins, modified with 5-66 mol % (based on alc. OH content) aldehydes RCHO (R = H, C1-17 alkyl, C2-19 alkylene, polyalkylene, Ph, alkylaryl, aralkyl, cycloalkyl, naphthyl, etc.), are prepared in presence of 0.001-3.5 weight % (based on weight of alcs.) Li, Na, K, Zn, Pb, Ca, Sr, Ba, Sb, Ti, and Zr salts. The resins or their reaction products (e.g., with polyisocyanates) are useful in preparing coatings. Thus, a mixture of soybean-oil fatty acid 2800, pentaerythritol 1088, phthalic anhydride 1184, PrCHO 36, and Zr octoate [18312-04-4] 3 parts was **heated** at 250-260° until acid number 10. The obtained lacquer was pigmented or dried without pigment in air.

ST polyester aldehyde modified; lacquer polyester aldehyde modified; metal salt polyesterification catalyst; **zirconium** octoate polyesterification catalyst; phthalate polyester aldehyde modified; maleate polyester aldehyde modified; urethane polyester coating aldehyde modified

IT Polymerization catalysts
(metal salts, for manufacture of aldehyde-modified polyesters)
IT Polyesters, compounds
RL: USES (Uses)
(reaction products with aldehydes, manufacture of, for coatings)
IT Aldehydes, compounds
RL: USES (Uses)
(reaction products with polyesters, manufacture of, for coatings)
IT Naphthenic acids, compounds
RL: USES (Uses)
(strontium salts, catalysts, for manufacture of aldehyde-modified polyesters)
IT Coating materials
(lacquers, aldehyde-modified polyesters as)
IT Urethane polymers, preparation
RL: PREP (Preparation)
(polyester-, aldehyde-modified, manufacture of, for coatings)
IT Fatty acids, polymers
RL: USES (Uses)
(soya, polymers with pentaerythritol and phthalic anhydride, reaction products with butyraldehyde, manufacture of, for coatings)
IT Fatty acids, polymers
RL: USES (Uses)
(sunflower-oil, polymers with polyols and carboxylic acid compds., reaction products with aldehydes, manufacture of, for coatings)
IT Fatty acids, polymers
RL: USES (Uses)
(tall-oil, polymers with polyols and carboxylic acid compds., reaction products with aldehydes, manufacture of, for coatings)
IT Polyesters, compounds
RL: USES (Uses)
(unsatd., reaction products with aldehydes, manufacture of, for coatings)
IT 127-09-3 584-08-7 1310-65-2 7440-24-6D, naphthenates 7778-77-0 15696-43-2 15879-01-3 18312-04-4 29918-55-6 79419-33-3
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for manufacture of aldehyde-modified polyesters)
IT **497-19-8**, uses and miscellaneous 1327-33-9 7646-85-7, uses and miscellaneous 17194-00-2 **36577-48-7**
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for manufacture of nonadienal-modified polyesters)
IT 56-81-5DP, polymers with polyols and carboxylic acid compds., reaction products with aldehydes 60-33-3DP, polymers with polyols and carboxylic acid compds., reaction products with aldehydes 77-99-6DP, reaction products with polyols and carboxylic acid compds., reaction products with aldehydes 85-44-9DP, polymers with pentaerythritol and fatty acids, reaction products with butyraldehyde 100-21-0DP, polymers with polyols and carboxylic acid compds., reaction products with nonadienal 100-52-7DP, reaction products with polyesters 104-55-2DP, reaction products with polyesters 108-31-6DP, polymers with polyols and carboxylic acid compds., reaction products with aldehydes 112-54-9DP, reaction products with polyesters 115-77-5DP, polymers with phthalic anhydride and fatty acids, reaction products with butyraldehyde

121-91-5DP, polymers with polyols and carboxylic acid compds., reaction products with aldehydes 122-03-2DP, reaction products with polyesters 123-72-8DP, reaction products with polyesters 124-04-9DP, polymers with polyols and carboxylic acid compds., reaction products with aldehydes 124-19-6DP, reaction products with polyesters 124-25-4DP, reaction products with polyesters 629-80-1DP, reaction products with polyesters 638-66-4DP, reaction products with polyesters 9081-90-7DP, polymers with formaldehyde-modified polyesters 11142-52-2DP, polymers with aldehyde-modified polyesters 26370-28-5DP, reaction products with polyesters 30525-45-2DP, reaction products with formaldehyde 30525-89-4DP, reaction products with polyesters 79420-56-7DP, reaction products with benzaldehyde
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of, for coatings)

L82 ANSWER 40 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1975:61337 CAPLUS
DN 82:61337
ED Entered STN: 12 May 1984
TI Granular **zirconium** hydrous oxide ion exchangers such as **zirconium** phosphate and hydrous **zirconium** oxide, particularly for column use
IN Marantz, Laurence B.; Moran, Clifford M.
PA CCI Life Systems, Inc.
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
IC C02B; C01G
NCL 252182000
CC 49-5 (Industrial Inorganic Chemicals)
Section cross-reference(s): 66
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 3840835	A	19741008	US 1973-394290	19730904
PRAI US 1973-394290		19730904		

AB Granular Zr phosphate suitable for use in ion exchange columns is prepared by adding granular ZrOCl2.xH2O to aqueous 0.5-2.5M H3PO4. The mixture is stirred for 5-30 min followed by separating the solids and washing with H2O to remove soluble P. The particle size of the resulting Zr phosphate granules is governed by the initial particle size of the ZrOCl2.xH2O. Granular ZrO(OH)2.xH2O is similarly prepared by using aqueous NaOH instead of H3PO4. The products are useful for removing NH4, P, and F ions from aqueous solns. by ion exchange.
ST **zirconium** phosphate ion exchanger; ion exchanger **zirconium** salt; oxide **zirconium** hydrous
IT Ion exchangers
(**zirconium** hydrous oxide and **zirconium** phosphate)
IT 7664-38-2, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(in **zirconium** phosphate and **zirconium** hydrous oxide manufacture)
IT 12161-08-9P **13772-29-7P**
RL: **PREP (Preparation)**
(ion exchangers, manufacture of)
IT 7699-43-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in **zirconium** phosphate and **zirconium** hydrous oxide manufacture)
IT 12195-65-2 13826-66-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with phosphoric acid)
IT 13746-89-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with sodium hydroxide)
IT 7558-80-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with **zirconium** oxychloride)
IT 1336-21-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with zirconyl nitrate)
IT **1310-73-2**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(with **zirconium** nitrate and zirconyl nitrate)

L82 ANSWER 41 OF 41 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1960:125972 CAPLUS
DN 54:125972
OREF 54:23987i,23988a-b
ED Entered STN: 22 Apr 2001
TI Separation of plutonium
PA United Kingdom Atomic Energy Authority
DT Patent
LA Unavailable
CC 3A (Nuclear Phenomena)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 839190		19600629	GB	

AB Pu is separated from other substances, e.g. fission products, in solution by adsorption on Zr3(PO4)4 or Ba(IO3)2. The adsorbent Zr3(PO4)4 is prepared by precipitation with H3PO4 with a Zr salt solution in the presence of 2-4N HNO3 at
90-100°, and digesting the solution for 1 hr. To adhere the Zr3(PO4)4 to the supporting material of glass wool, it is digested with the glass wool for 1-2 hrs. The Pu is in its reduced or phosphate-insol. state. The adsorption is facilitated by the absence of U and the presence of mixed mineral acids, e.g. 1-3N HNO3 or HCl and 0.02-4N H3PO4. The solution containing the Pu is passed through a column containing the adsorbent. Approx. 280 parts Zr3(PO4)4 per part Pu results in optimum adsorption. Mixed mineral acids are used to **wash** the column and eliminate all

β- and γ-activity. To remove the Pu from the column, it is **washed** with 7N HNO3.

IT Nuclear Reactors
(fuel (irradiated) processing, Pu separation in)

IT Adsorption
(of plutonium, by Ba(IO3)2 or Zr3(PO4)4, in **processing** of fission **product** solns.)

IT 7440-61-1, Uranium
(fission products of, Pu recovery from)

IT 10567-69-8, Barium iodate **15438-04-7**, **Zirconium** phosphate, Zr3(PO4)4
(plutonium separation from fission products by adsorption by)

IT 7440-07-5, Plutonium
(separation of, from fission products by adsorption by Ba(IO3)2 or Zr3(PO4)4)

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